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By Dorothy Nickerson, Cotton Division

This report consists of a series of diagrams and tables that provide background information and illustrate the progress of grade standards work from 1950 to 1956 through color measurements which have been obtained by use of the Nickerson-Hunter Cotton Colorimeter. The titles of the diagrams are designed to tell the story, and the sequence to provide background information for what follows. The diagrams and tables are grouped as shown.

Figures 1 - 7	General background information.
Figures 8 - 16	Original standards and bales, 1952-1956.
Figures 17 - 22	Copies of standards, random sets as issued between conferences, including replacement bales.
Tables 1 - 2	Usual amount of cotton put up from each bale, and number of boxes and samples distributed 1953-1955. (Basis for estimating requirements.)
Figures 23 - 26	With figures 8 to 16, these diagrams provide information on color change of cottons held in Washington and elsewhere for Spotted, White, and Tinged.
Figures 27 - 31	Change of standards in use. Measurements on sets returned after use.
Figures 32 - 34 Tables 3 - 4	Trash (nonlint) data for standards and crop.
Figure 35	Color of lint cotton, after removal of trash (nonlint) content.
Figures 36 - 38	Range of color in standards for 1956 conference.
Figures 39 - 41	Color of American Egyptian – standards and crop.
Figures 42 - 44	Color of Cotton Linters – standards and crop.

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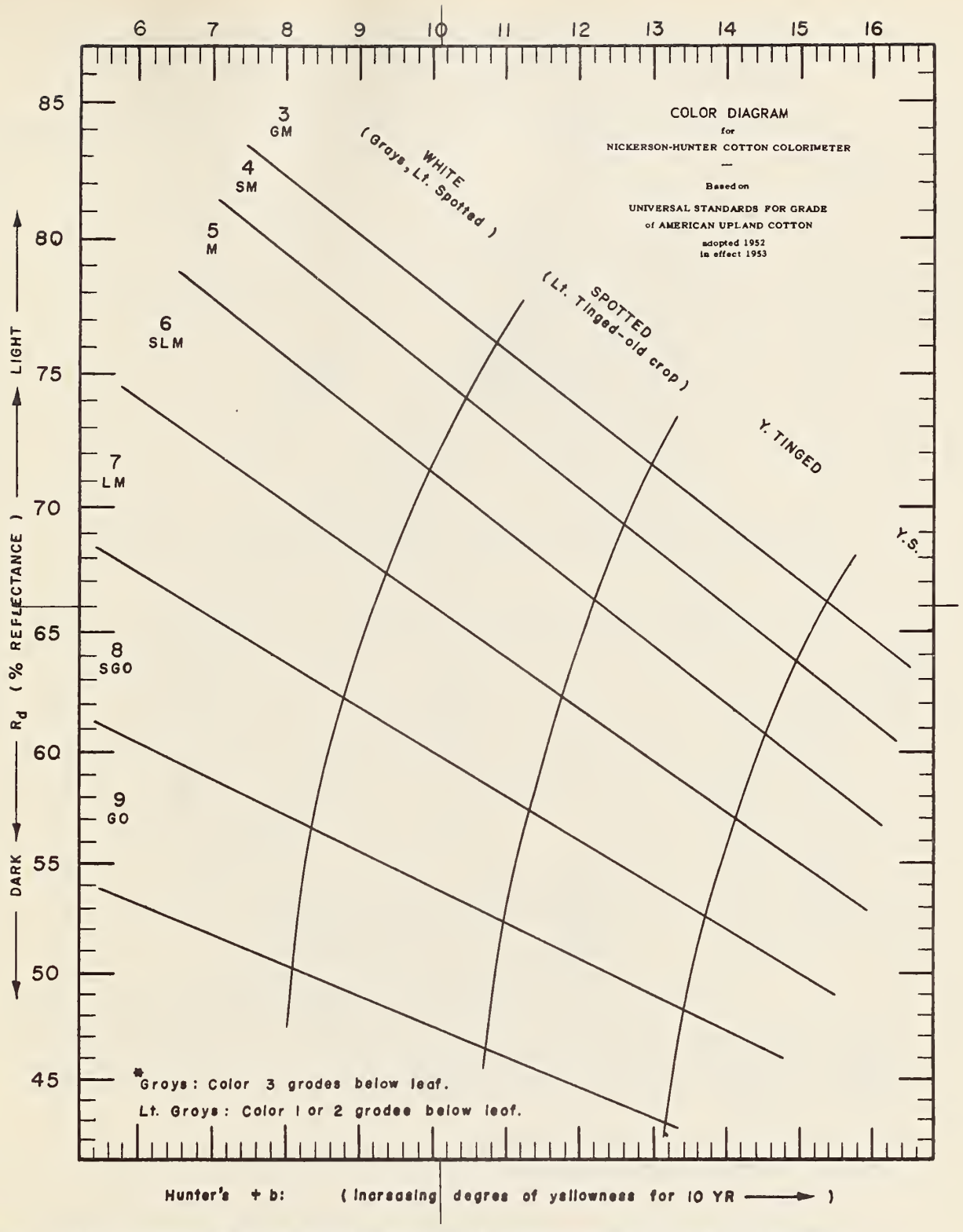


FIGURE 1.--COLOR DIAGRAM OF COTTON GRADES FOR THE NICKERSON-HUNTER COTTON COLORIMETER.

Color has three dimensions (hue, lightness, and chroma) but hue is so nearly constant for cotton that measurements of lightness and chroma are sufficient to define the color of cotton grades. Hunter scales used in this instrument are indicated in a vertical direction by percent reflectance (R_d), which measures the lightness of a sample, and in a horizontal direction by Hunter's +b which, for this instrument, indicates the degree of yellowness (with hue constant) and thus provides a measure of chroma. High grades are toward the top of the diagram, low grades toward the bottom; gray colors are toward the left, and tinged or stained colors toward the right The original of this diagram fits over the diagram on the instrument, so that indicated points may be plotted directly.

Guides for purchase of bales for standards. Dots (white grades) and short lines (spots and tinges) represent color positions wanted. Circles and ellipses indicate range of samples expected within purchased bales.

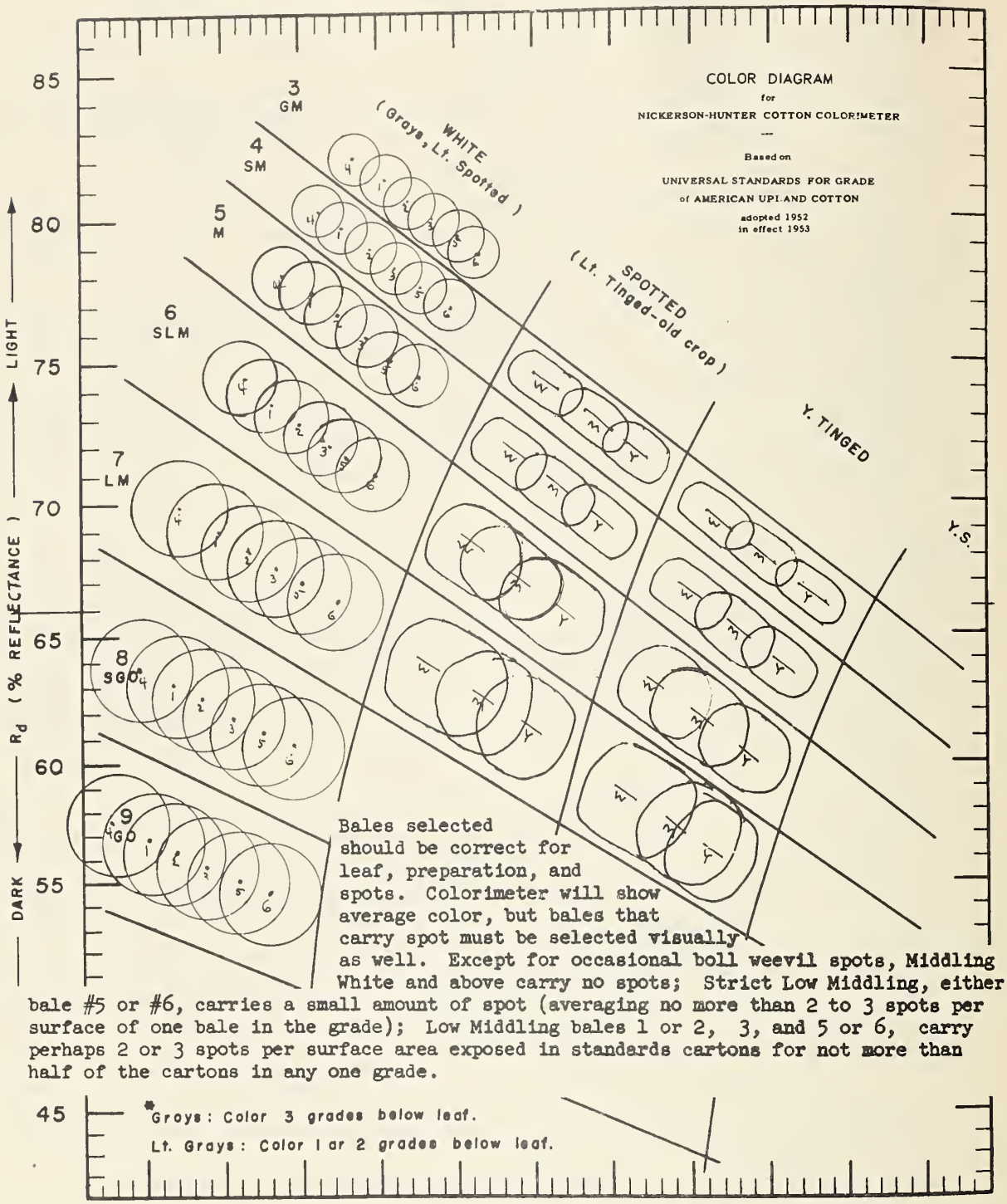
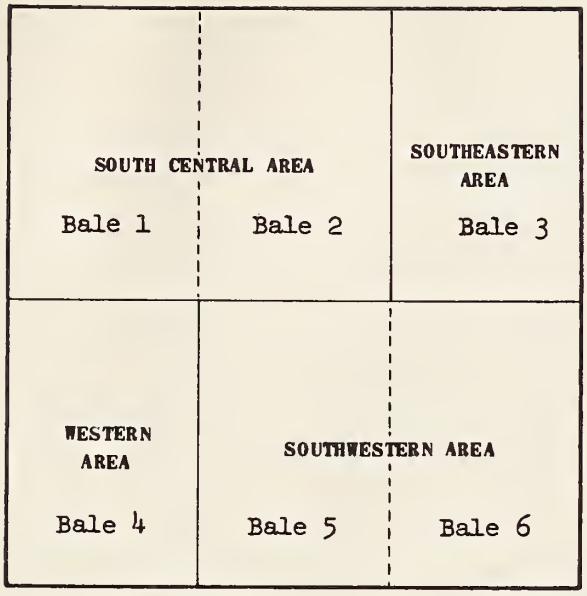
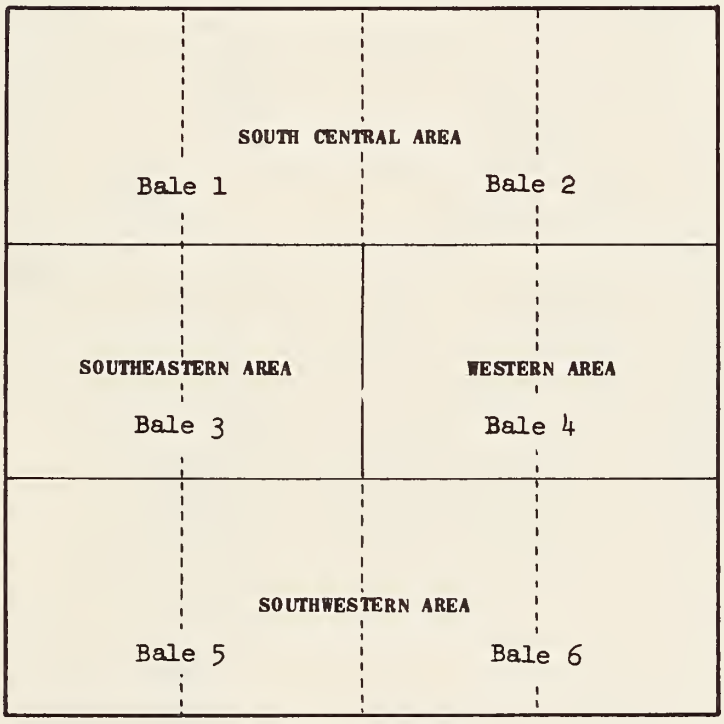


FIGURE 2.--COLOR GUIDE FOR PURCHASE OF BALES FOR COTTON GRADE STANDARDS.

This guide is based on standards adopted in 1953 that were, in turn, based on crop survey data available for many years. Color for positions in White grades is based on the relation of the average grade color for cottons grown and classed in four cotton areas over a period of many years.



GUIDE BOXES FOR GRADE OF AMERICAN UPLAND COTTON



UNIVERSAL STANDARDS FOR AMERICAN UPLAND COTTON

FIGURE 3.--LOCATION OF SAMPLES FOR WHITE GRADES IN 6 AND 12 SAMPLE OFFICIAL BOXES BY AREA OF GROWTH.

Six bales are used. The bale numbers indicate the position in the 6-sample guide box; large boxes contain the same bales, but two samples of each.

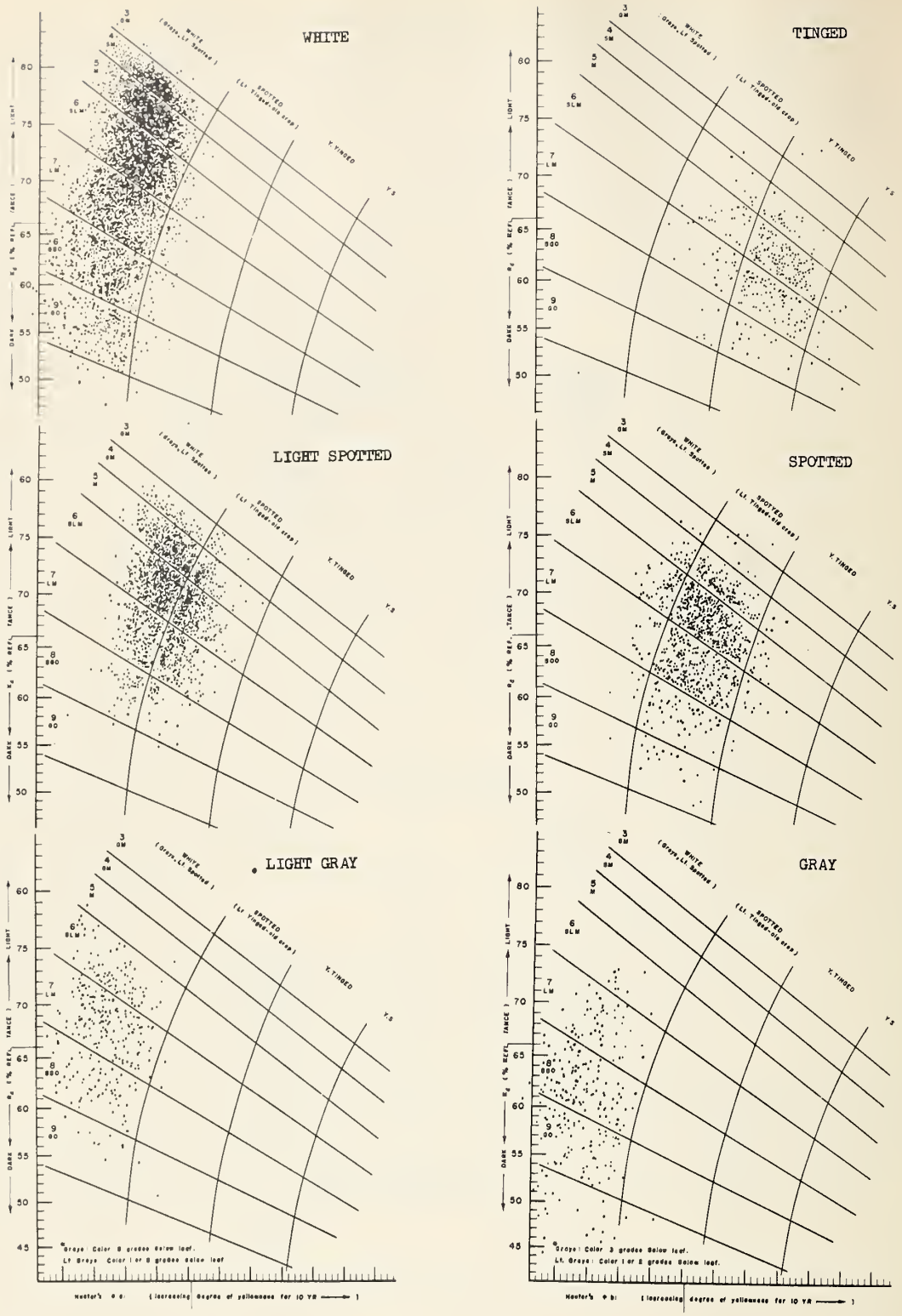


FIGURE 4.--CROP DATA FOR 1955. This is typical of information available for many past years. Each dot represents a sample classed in the color group indicated: White, Tinged (for both of which there are standards in physical form), Light Spotted, Spotted, Light Gray, Gray. The color diagram is based on the grade standards for White and Tinged cottons in use since 1953.

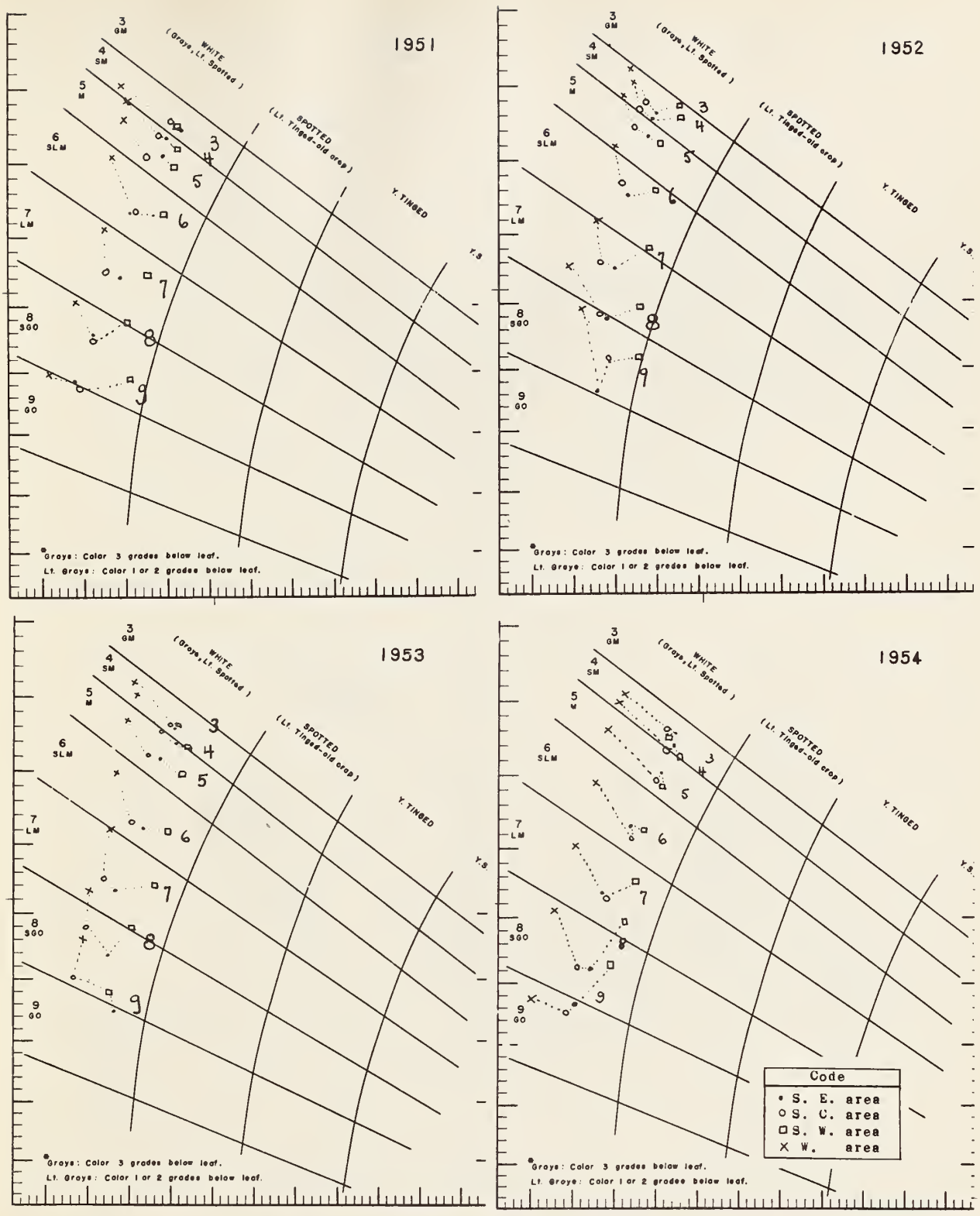


FIGURE 5.--AVERAGE COLOR OF WHITE GRADES OF COTTON AS THEY HAVE BEEN CLASSED IN FOUR AREAS FOR TYPICAL CROP YEARS, 1951 THROUGH 1954.

As shown, the Western Area cotton is the whitest or grayest in each grade, and the Southwestern Area cotton is the creamiest or yellowest.

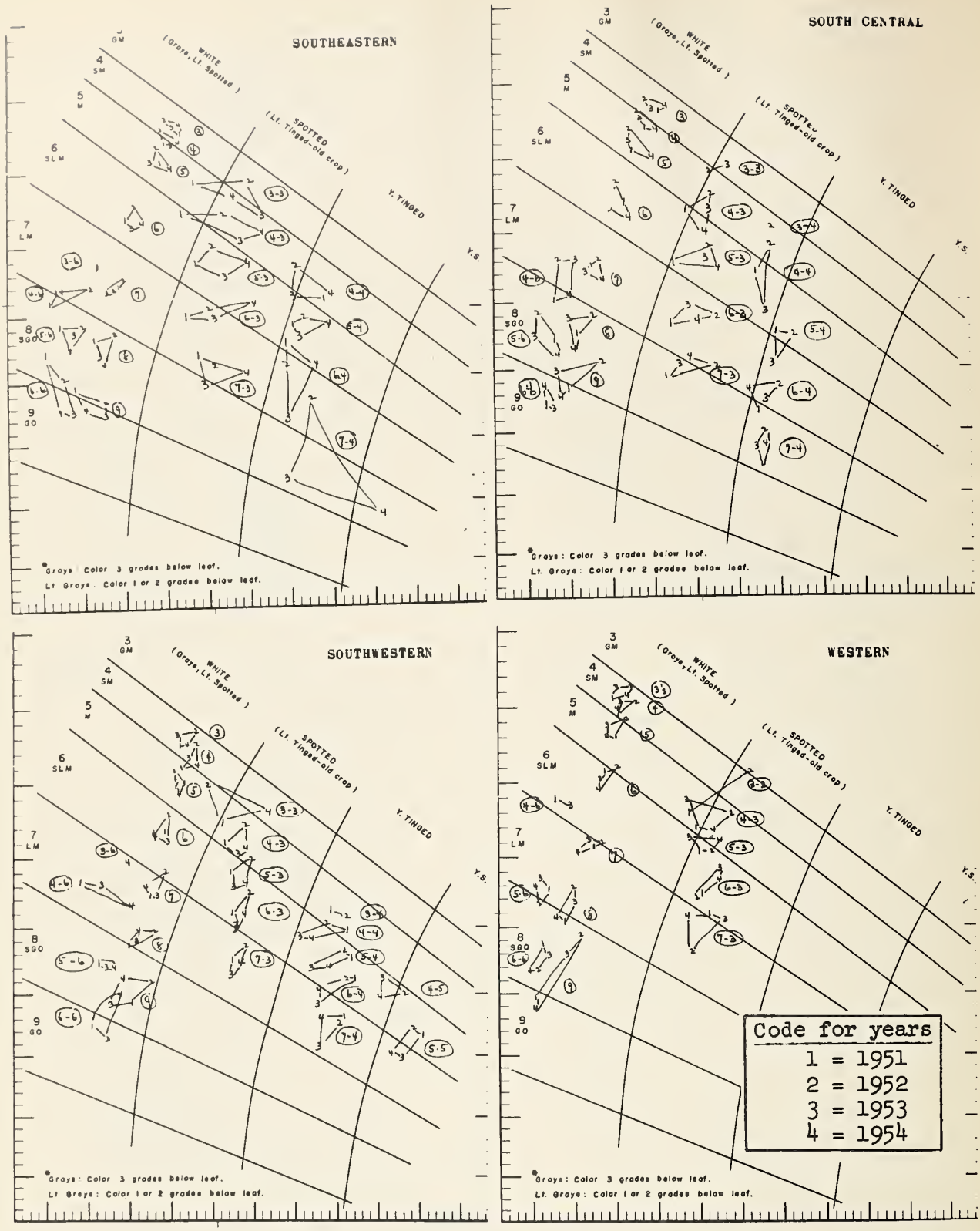


FIGURE 6.--AVERAGE COLOR OF COTTONS CLASSED IN PLUS GRADES, SPOTTED, TINGED, AND GRAYS, BY AREAS FOR FOUR CROP YEARS, 1951-1954.

Circled numbers represent the usual code for grades: 3 to 9 = M to GO. This is combined with numbers 3 for Spotted, 4 for Tinged, 5 for Stained, 6 for Gray, 9 for Light Spotted, and 8 for Light Gray. E.g., 5 is M, 5-3 is M Sp., 5-5 M St., 5-6 M Gray, 5- 9 M Lt. Sp., and 5- 8 M Lt.Gray.

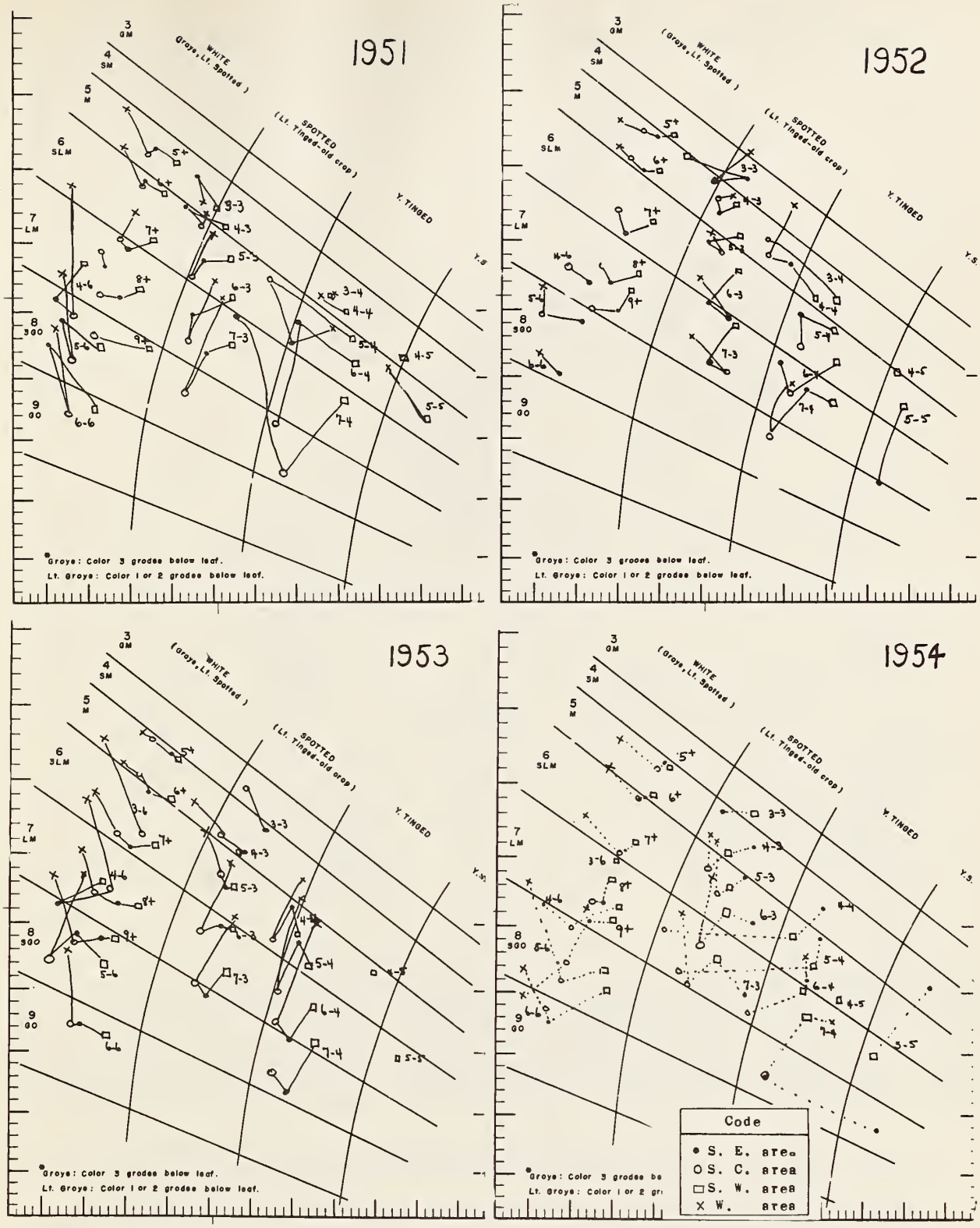
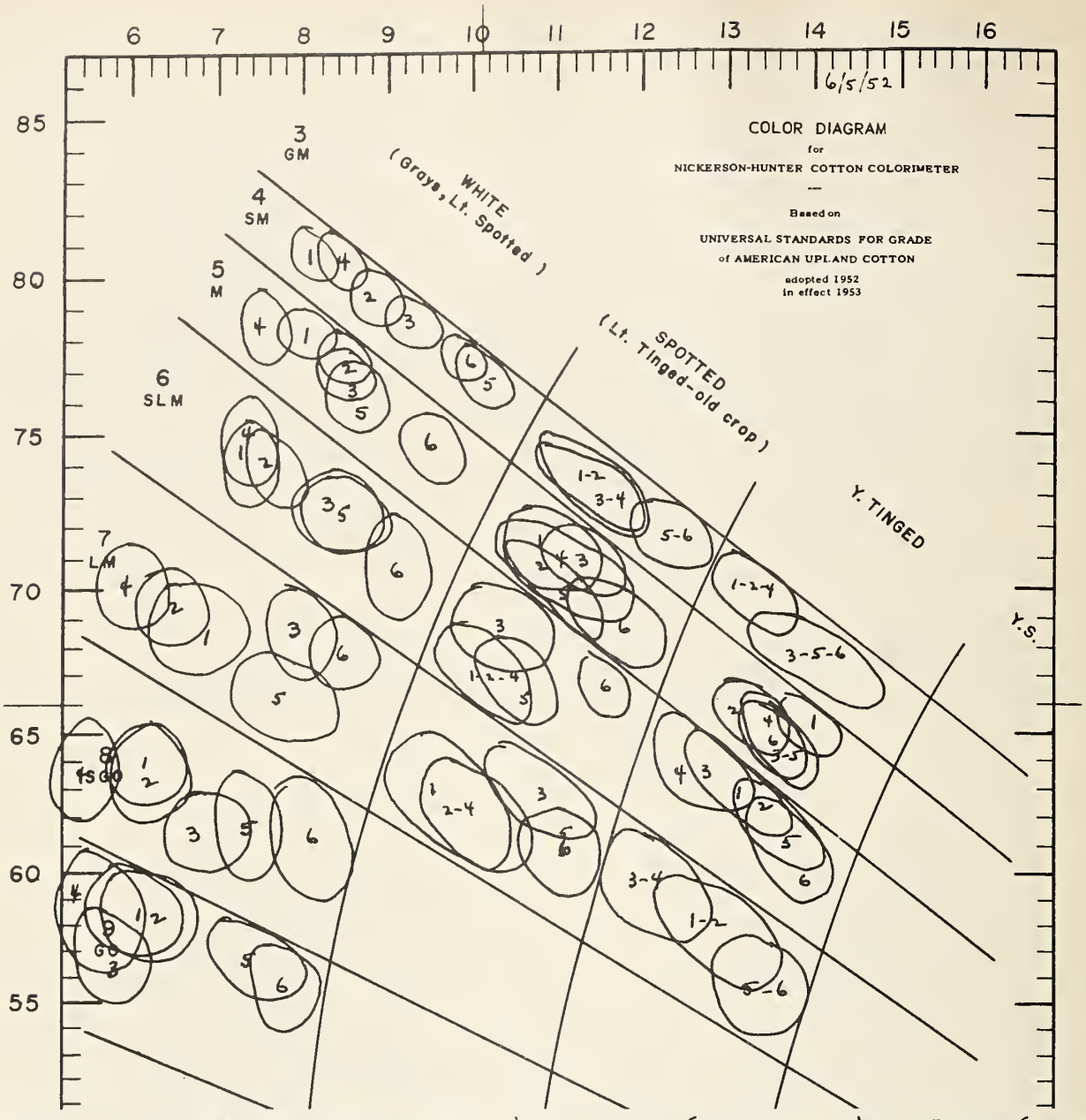


FIGURE 7.--AVERAGE COLOR OF COTTONS CLASSED IN FOUR AREAS FOR YEARS 1951-1954. Data are for plus grades, Spotted, Tinged, and Grays.



	SM	M	SLM	LM	SGO	GO	4 Sp	5 Sp	6 Sp	7 Sp	4T	5T	6T	7T
1	129245	876309	68328	136293	136004	695464	367656	753450	250517	32374	380046	2639716	13427	11667
2	146897	149430	1084395	879593	136005	695564	367565	499916	250517	2771	380046	13173	13427	11667
3	15294	17534	8449922	825	372322	1350315	677816	677808	179735	759793	713627	13155	17417	18218
4	588016	564143	405229	1667914	7797614	608667	677816	751034	250517	2771	380046	2597143	24078	18218
5	266981	178953	2644949	22838	2446522	13121	542617	261428	10891	28941	713627	13155	2691155	11824
6	110856	266843	31601	2629166	13115	13155	542617	2657539	24078	11642	713627	13173	13369	11824

FIGURE 8.--BALES PURCHASED ON BASIS OF FIGURE 2 THAT WERE USED IN PREPARING GRADE STANDARDS ADOPTED IN 1952.

The Original Set, #101, was selected from boxes put up from these bales.

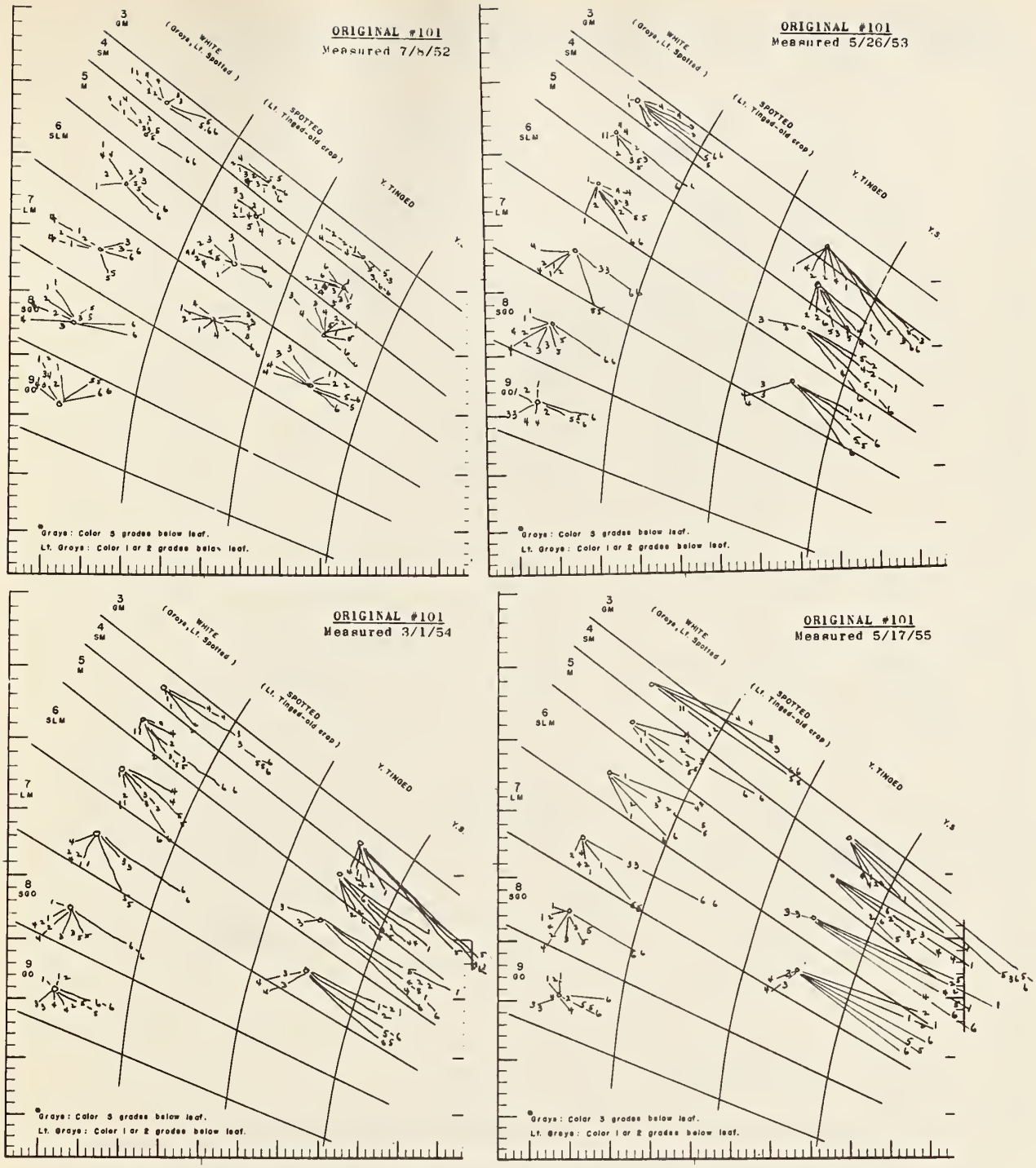


FIGURE 9.--ORIGINAL STANDARD, SET #101, FOR WHITE AND TINGED GRADES AS MEASURED AT TIME OF ADOPTION IN 1952, AND EACH YEAR FOLLOWING, 1953, 1954, 1955. (For 1956 see next figure.)

Each year the color change increased until in 1956 some or all samples in every grade except Good Ordinary have yellowed so much that they no longer are in the correct category. The small numbers indicate the bale positions.

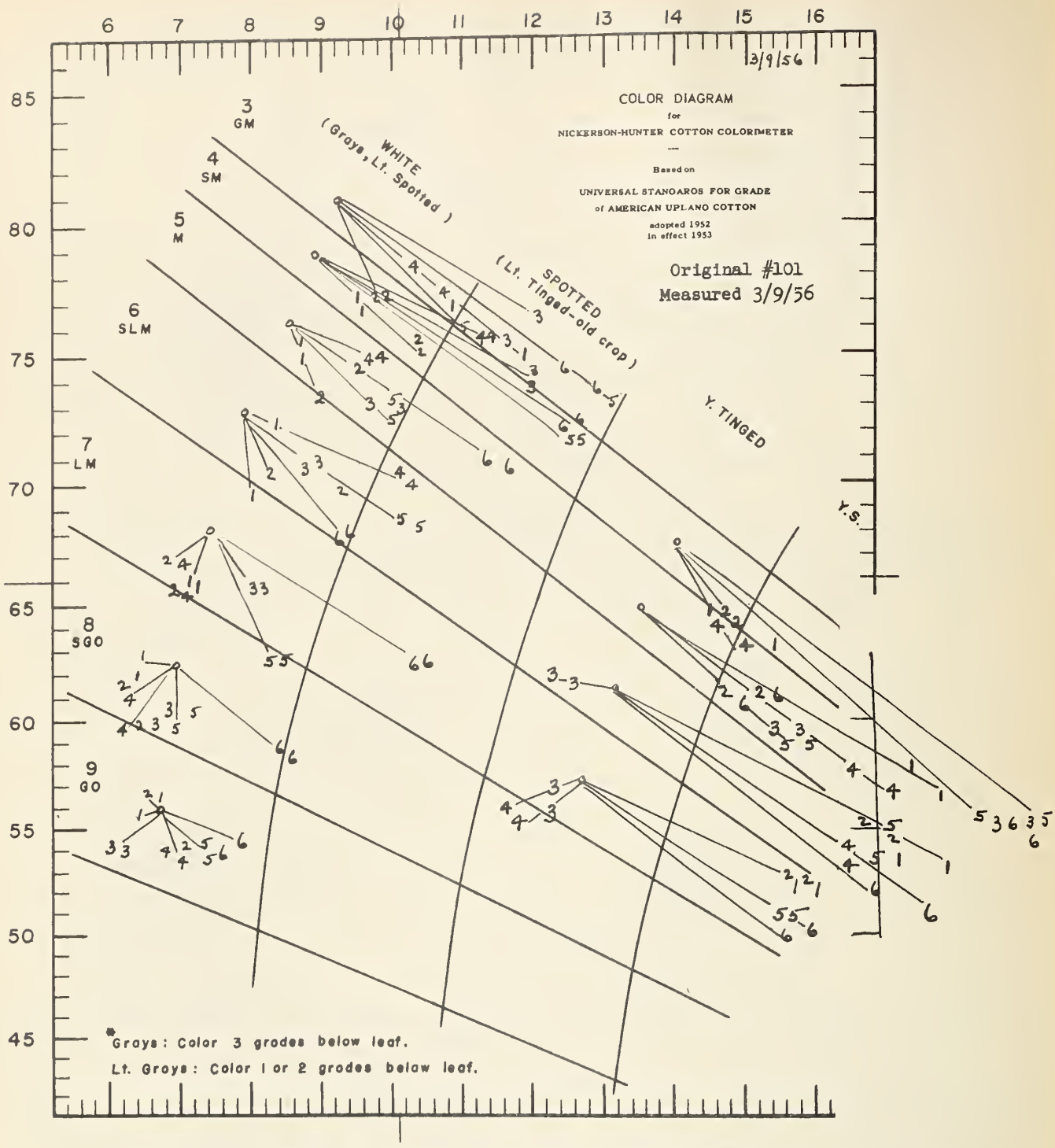


FIGURE 10.--ORIGINAL SET #101 OF WHITE AND TINGED STANDARDS AS THEY WERE MEASURED MARCH 1956, ABOUT 3-1/2 YEARS AFTER THE ORIGINAL MEASUREMENT OF JULY 1952.

The Good Middling Original was adopted 1953, effective 1954; it also shows great change.

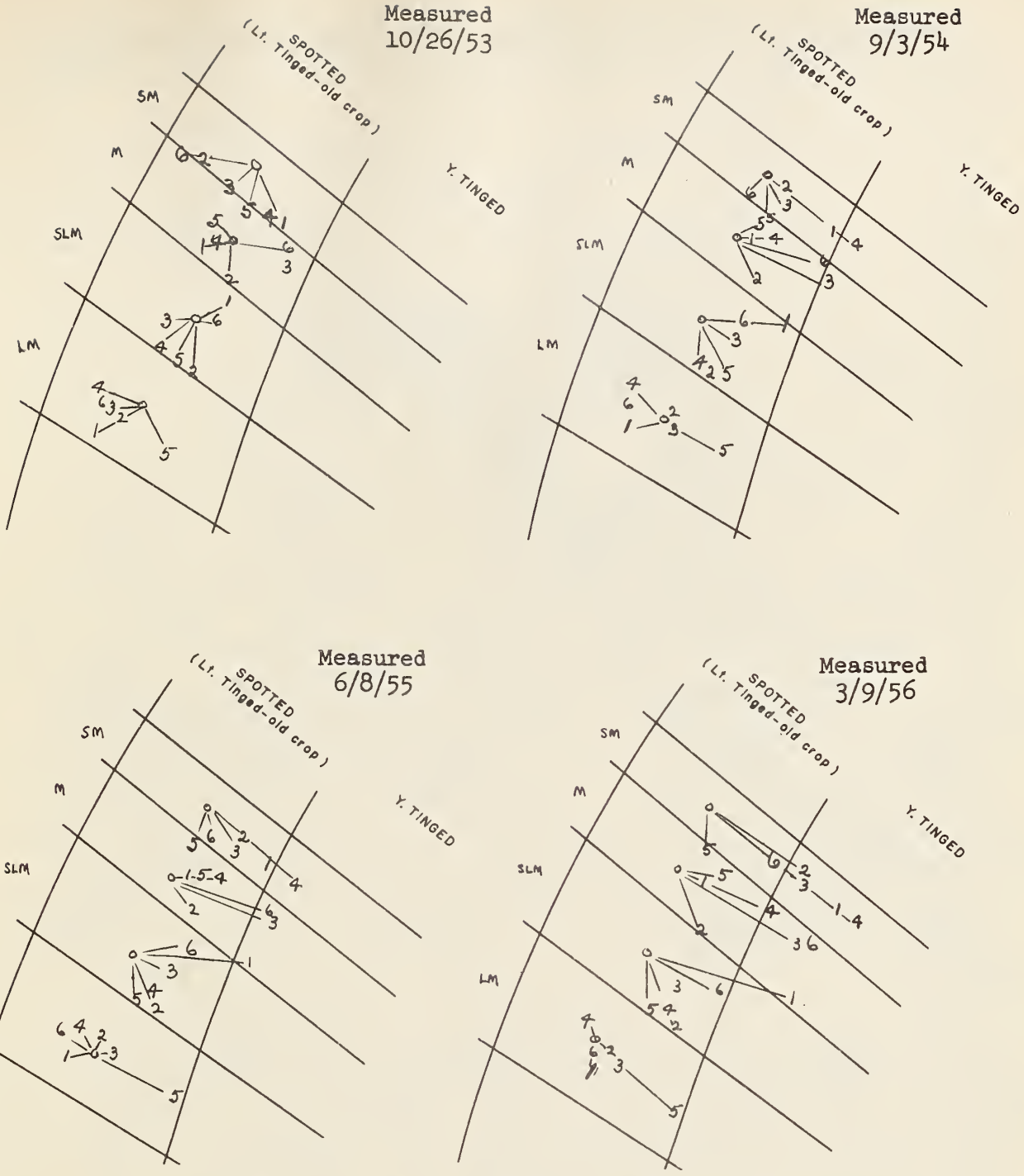


FIGURE 11.--COLOR MEASUREMENTS OF SPOTTED GUIDE, SET #00225, PUT ASIDE AS A RESERVE SET, AS MEASURED PERIODICALLY SINCE 1953.

Measurements are as made at the time Spotted Guides first were shipped, then each year later, at intervals of 11, 20, and 29 months. While these Spotted Guides show less change than sets of 1953 White and Tinged standards, this is not necessarily typical, for on the basis of other measurements it is expected that the pattern of change in Spotted cottons should fit in with the pattern of change for the White and Tinged cottons.

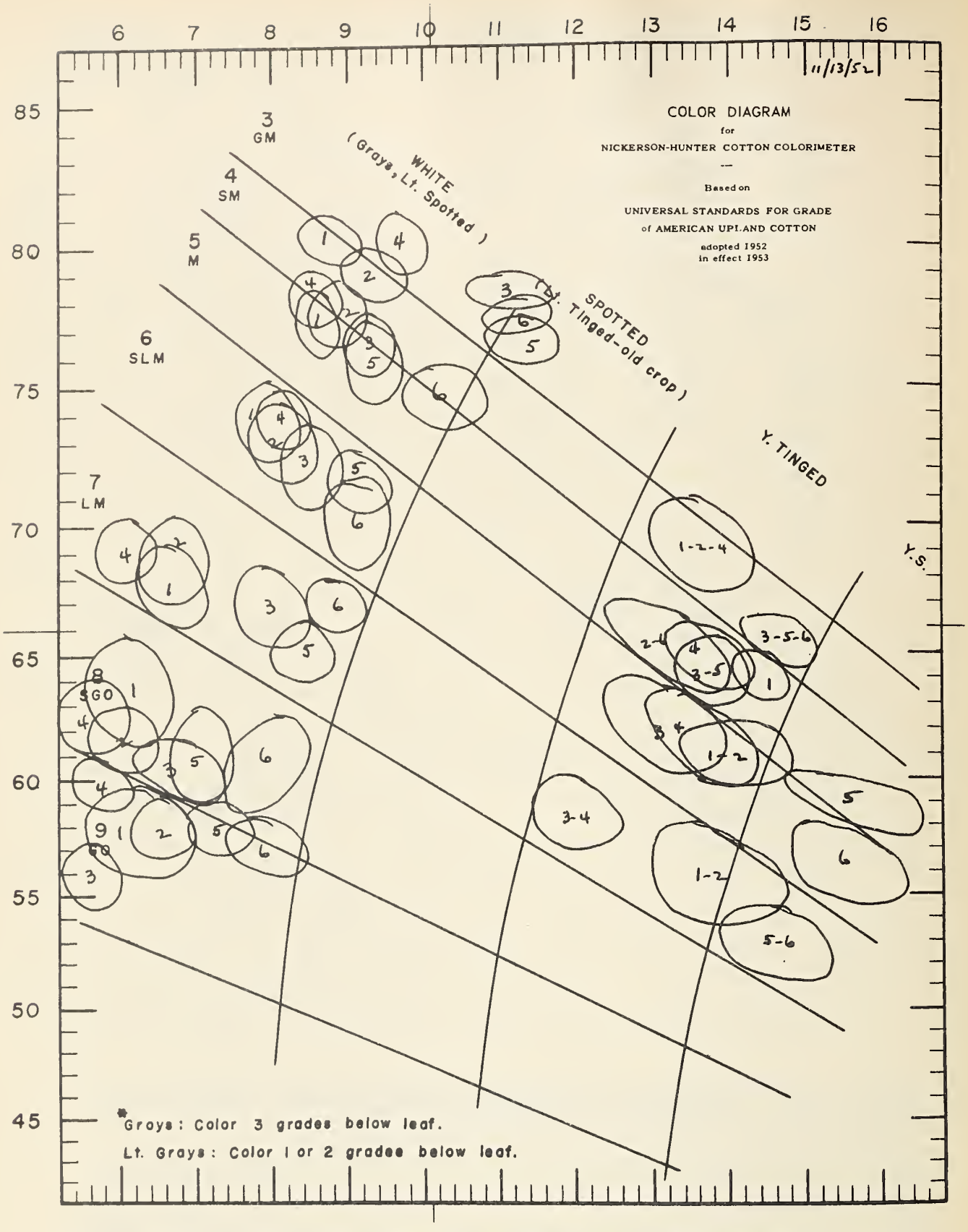
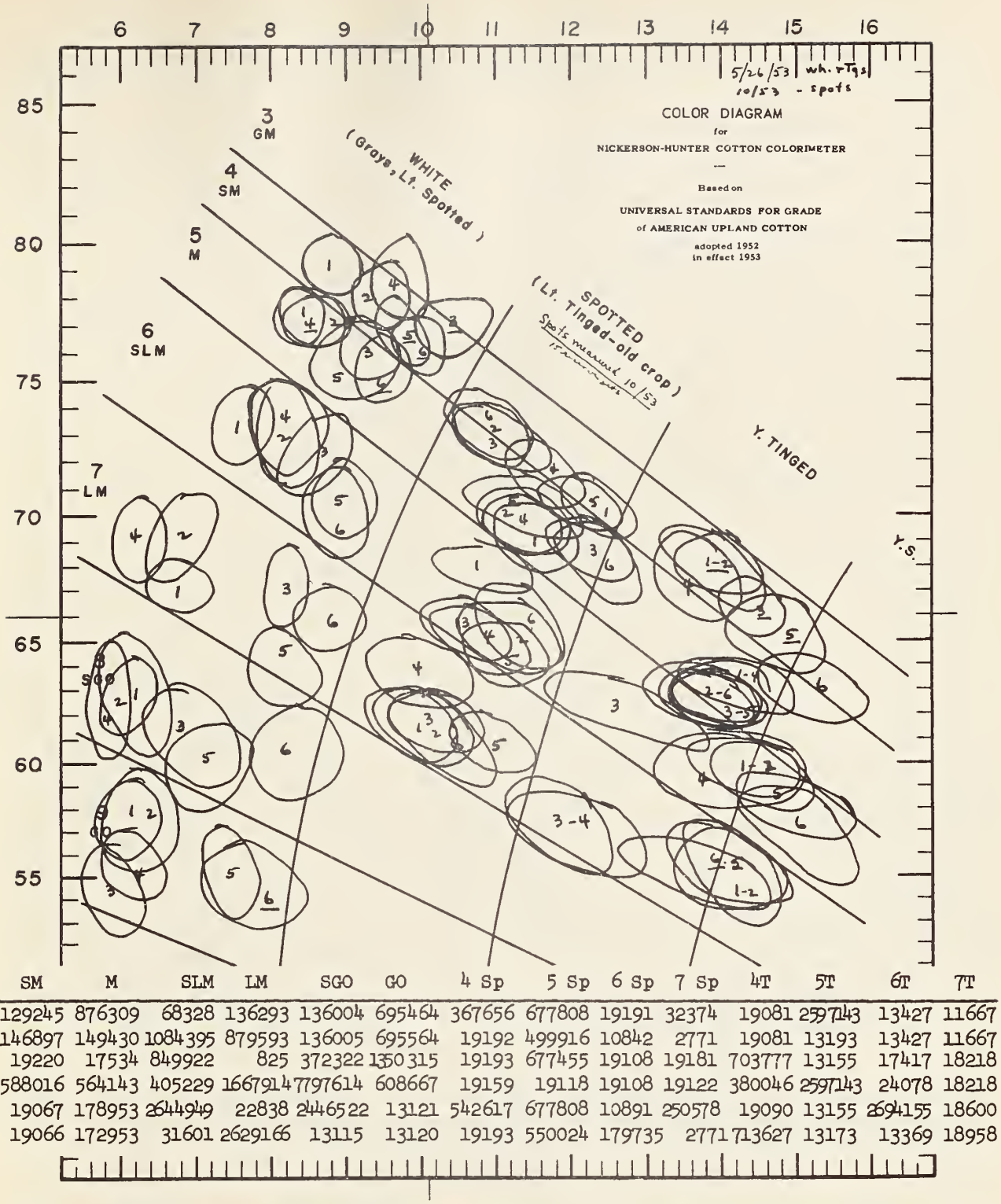


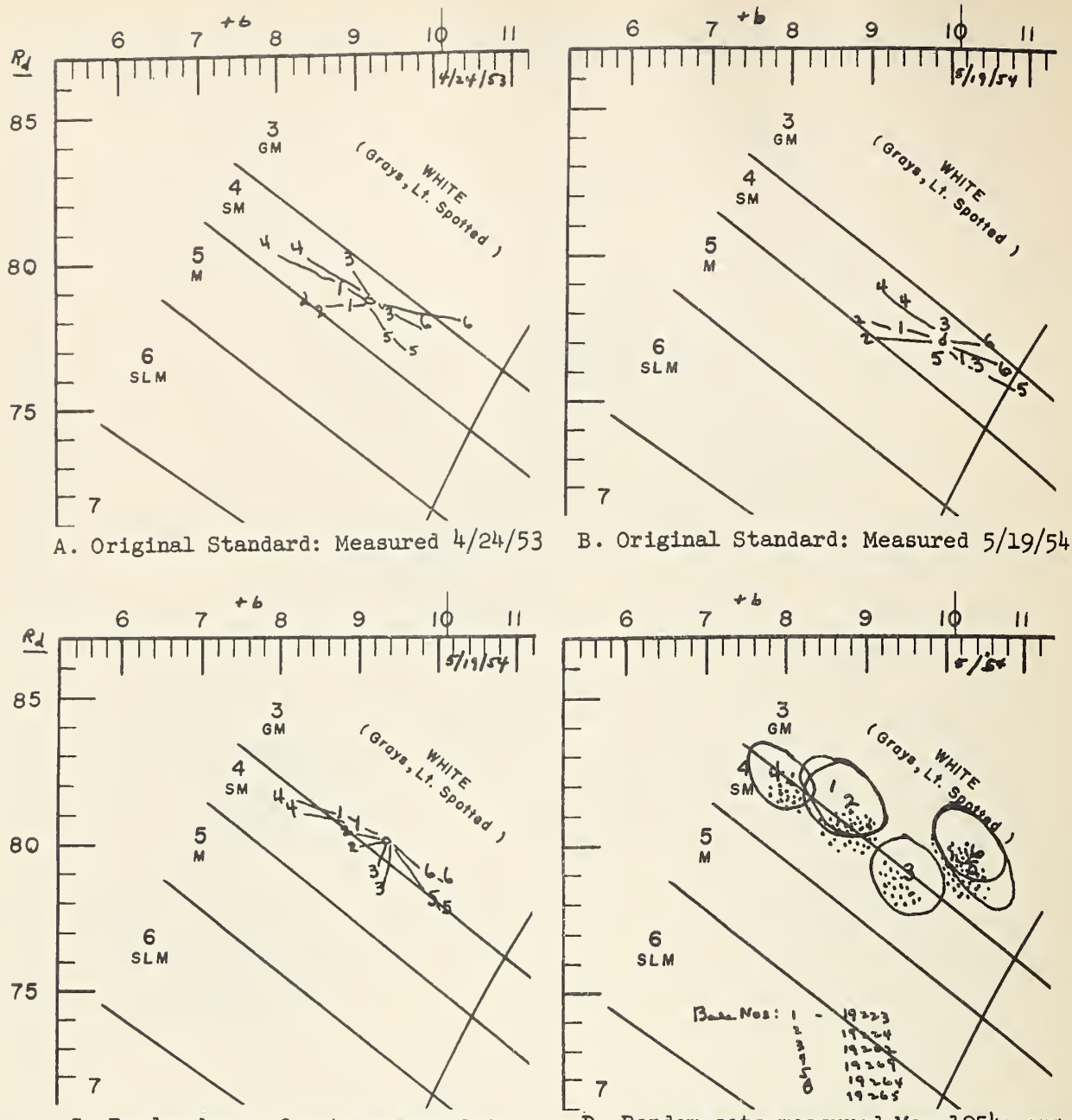
FIGURE 12.--ORIGINAL BALES, AFTER 1952 SUMMER STORAGE IN WASHINGTON.

These measurements, made November 1952, already indicate color change.



1	129245	876309	68328	136293	136004	695464	367656	677808	19191	32374	19081	259743	13427	11667
2	146897	149430	1084395	879593	136005	695564	19192	499916	10842	2771	19081	13193	13427	11667
3	19220	17534	849922	825	372322	1350315	19193	677455	19108	19181	703777	13155	17417	18218
4	588016	564143	405229	1667914	7797614	608667	19159	19118	19108	19122	380046	2597143	24078	18218
5	19067	178953	2644949	22838	2446522	13121	542617	677808	10891	250578	19090	13155	2694155	18600
6	19066	172953	31601	2629166	13115	13120	19193	550024	179735	2771	713627	13173	13369	18958

FIGURE 13.--BALES USED IN 1953 CONFERENCE BOXES. Underlined bale positions already had to be replaced because of color change from bales in original box.



A. Original Standard: Measured 4/24/53

B. Original Standard: Measured 5/19/54

C. Random box, of sets prepared for conference; measured 5/19/54

D. Random sets measured May 1954; and range of bales used in standards

FIGURE 14.--COLOR OF GOOD MIDDLING STANDARDS. A, Original, measured April 1953; B, Original, measured May 1954 (already shows considerable yellowing); C, Random box from sets prepared for 1954 conference, measured May 1954; D, Random sets measured May 1954, together with range of entire bales as used in standards.

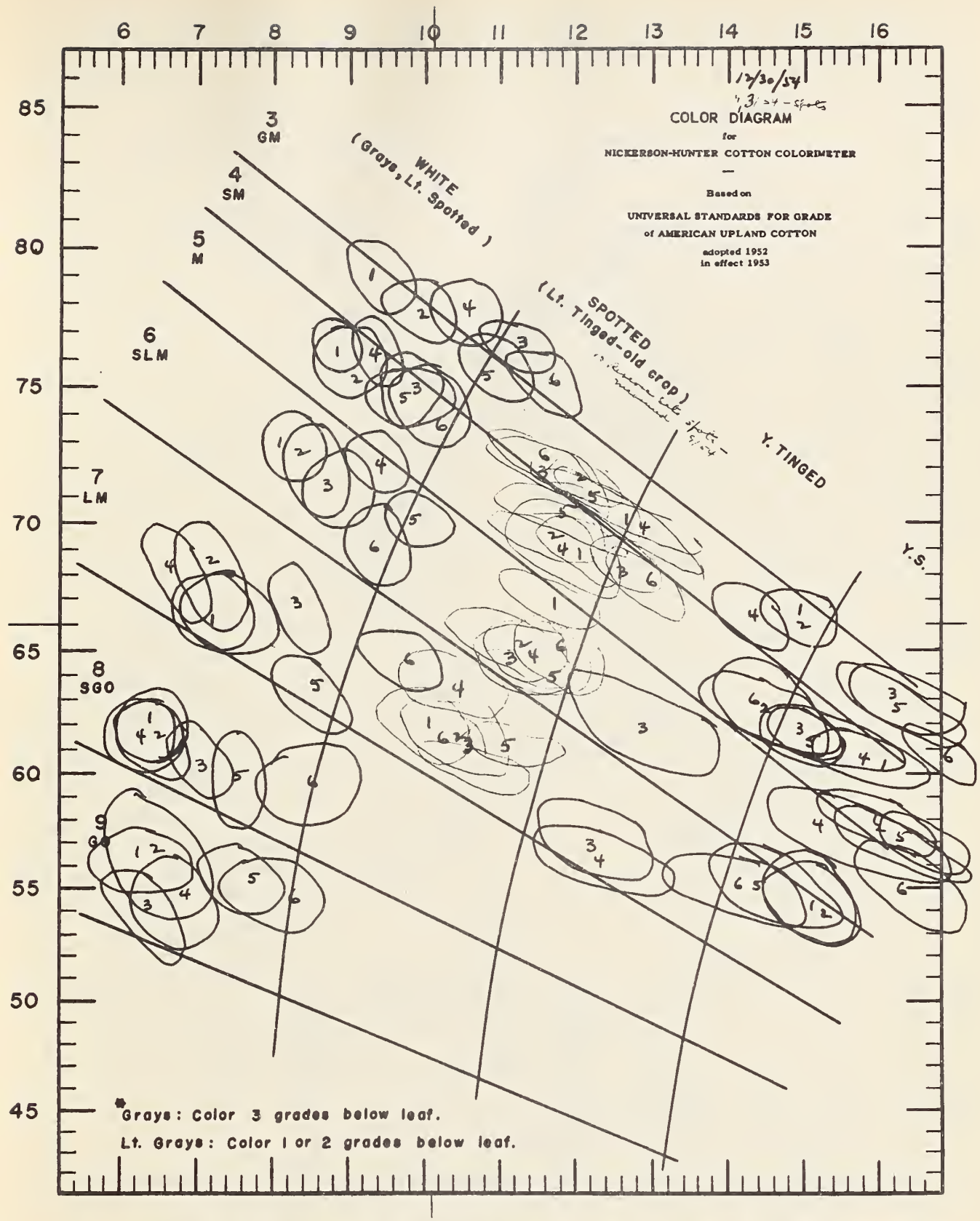


FIGURE 15.--RANGE OF 10 KEY SETS OF 1953 WHITE AND TINGED STANDARDS BOXES UNOPENED UNTIL MEASURED DECEMBER 1954, AND 15 SETS OF SPOTTED GUIDE BOXES MEASURED SEPTEMBER 1954.

Note continued yellowing as compared to either figure 8, the original standards bales, or figure 13, the same samples in 1953.

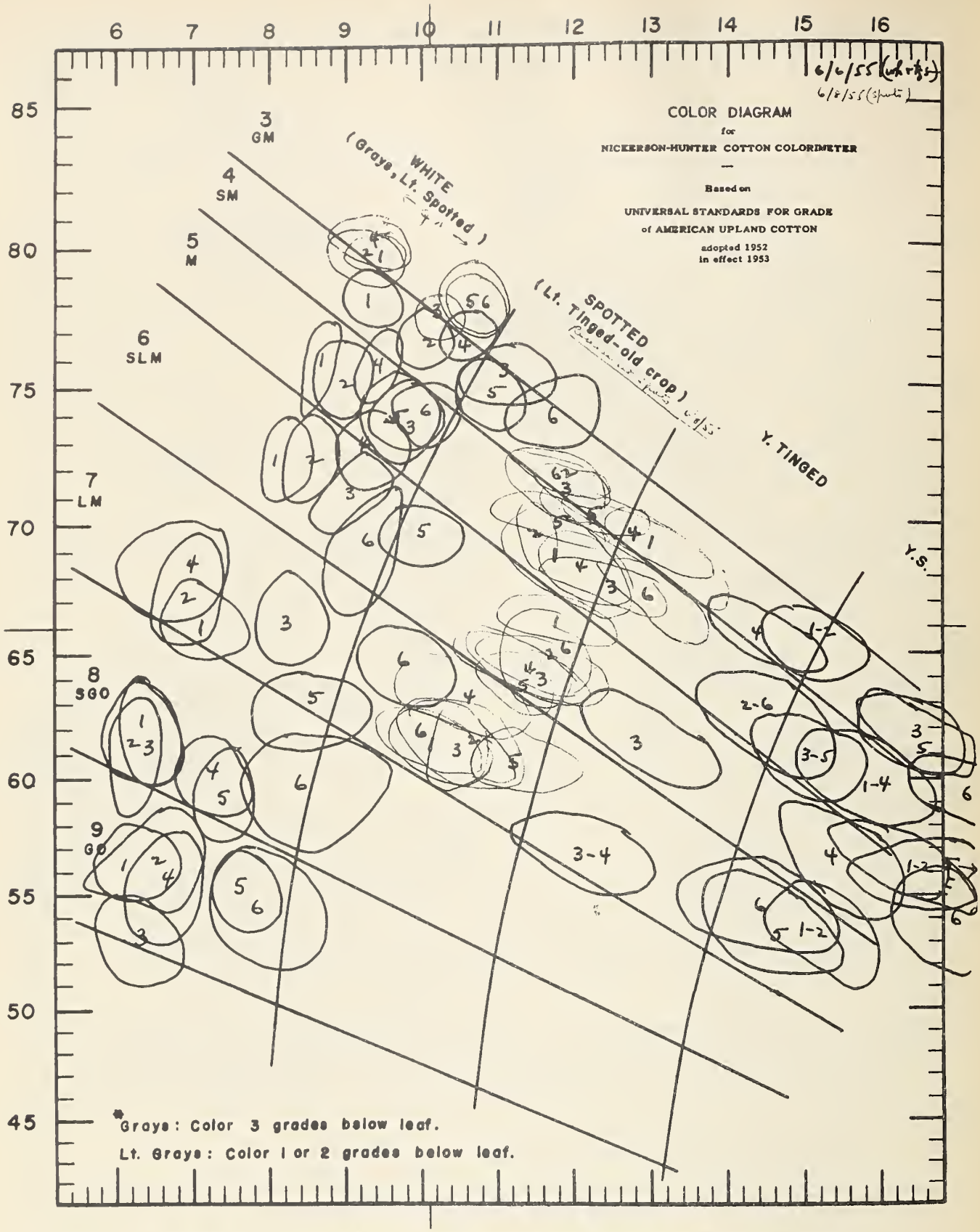
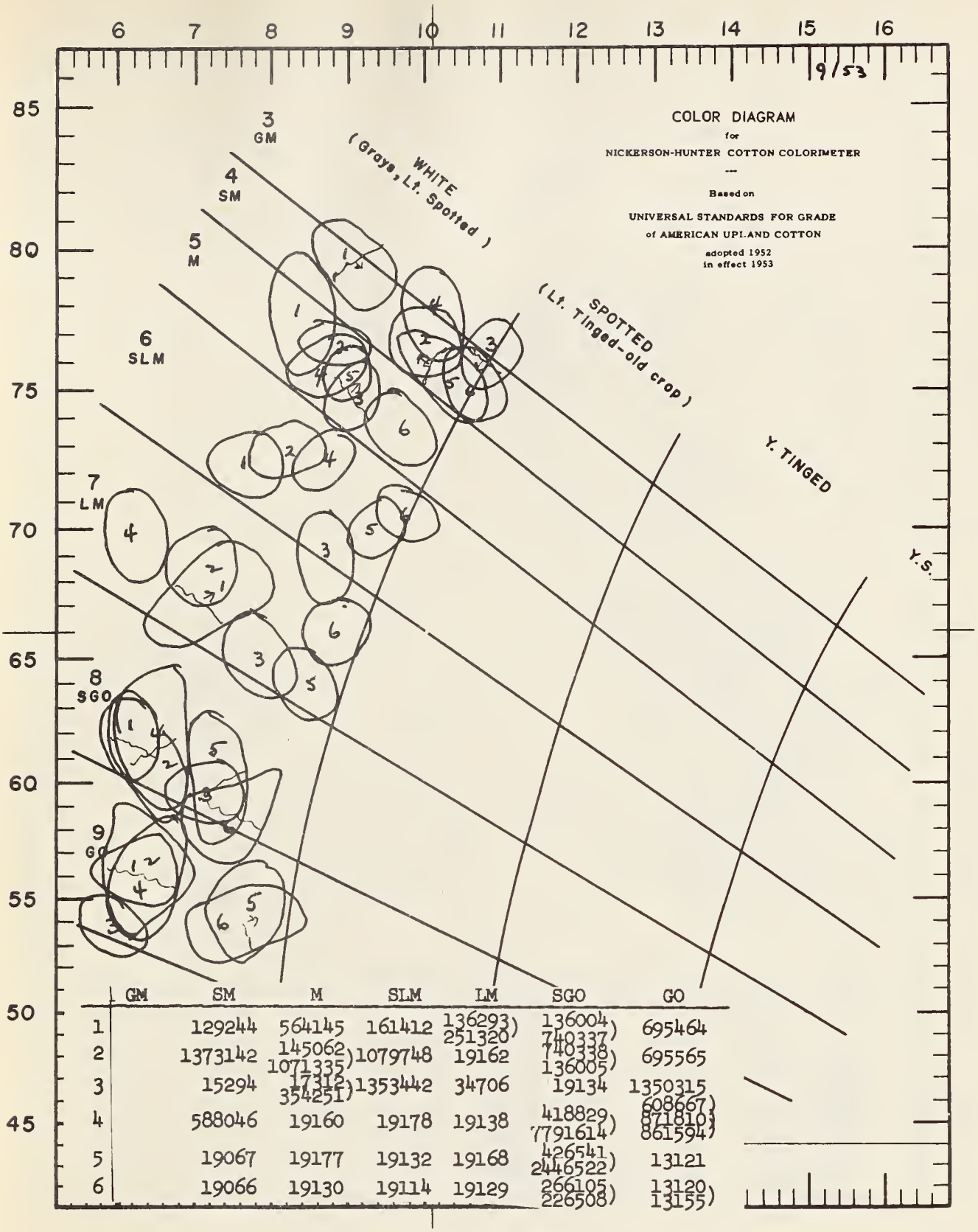


FIGURE 16.--RANGE OF 15 KEY SETS OF 1953 STANDARDS, AND OF RESERVE SETS OF SPOTTED BOXES, AS REMEASURED JUNE 1955.

Note continued yellowing as compared to figures 8, 13, and 15.



	GM	SM	M	SLM	LM	SGO	GO
1		129244	564145	161412	136293) 251320)	136004) 740337)	695464
2		1373142	145062 1071335)	1079748	19162	740338) 136005)	695565
3		15294	17312) 354251)	1353442	34706	19134	1350315 608667)
4		588046	19160	19178	19138	418829) 791614)	871810) 861594)
5		19067	19177	19132	19168	426541) 2446522)	13121
6		19066	19130	19114	19129	266105) 226508)	13120) 13155)

FIGURE 17.--RANDOM SETS OF WHITE GRADES BEFORE PHOTOGRAPHING, SEPTEMBER 1953.

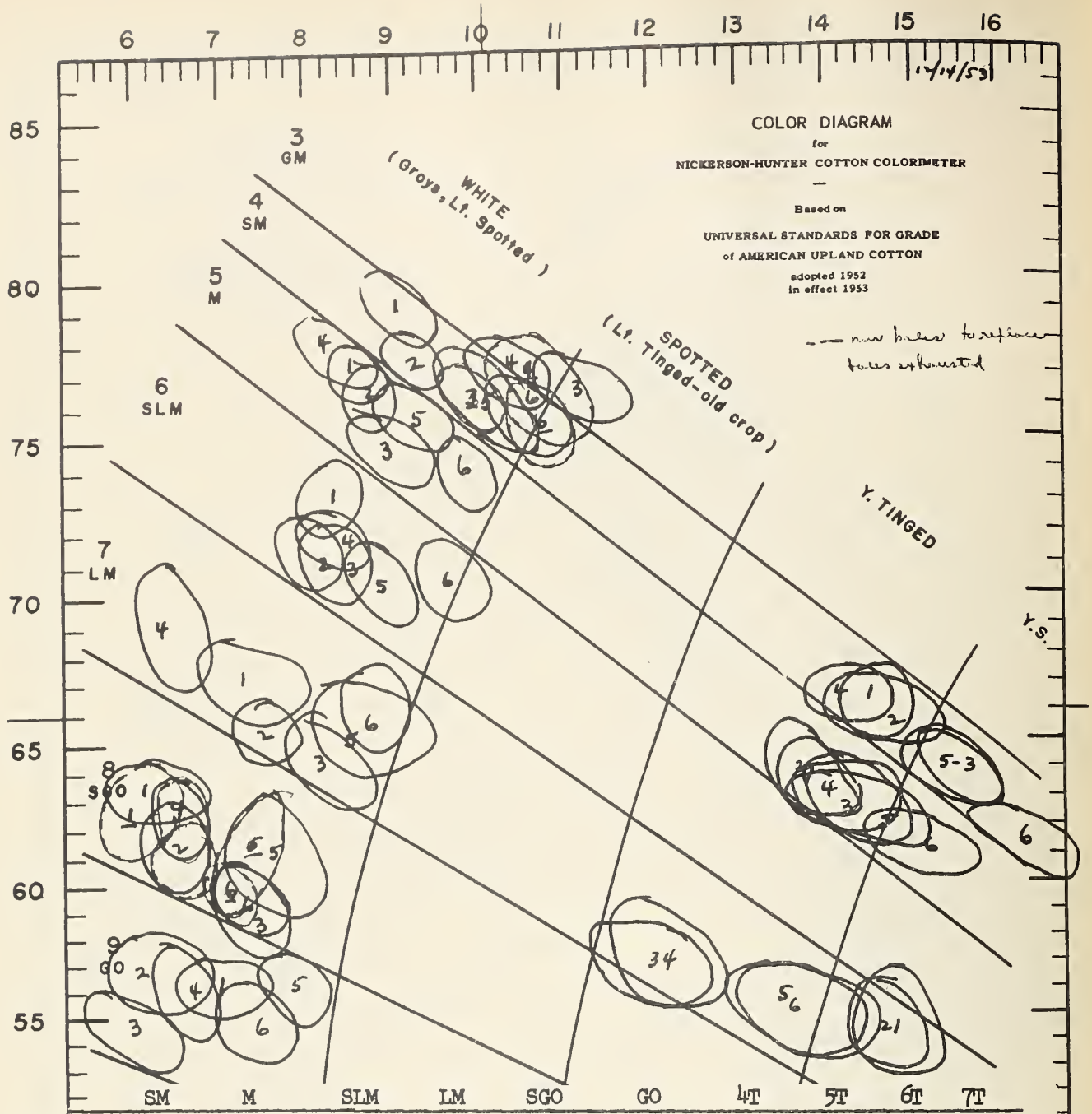
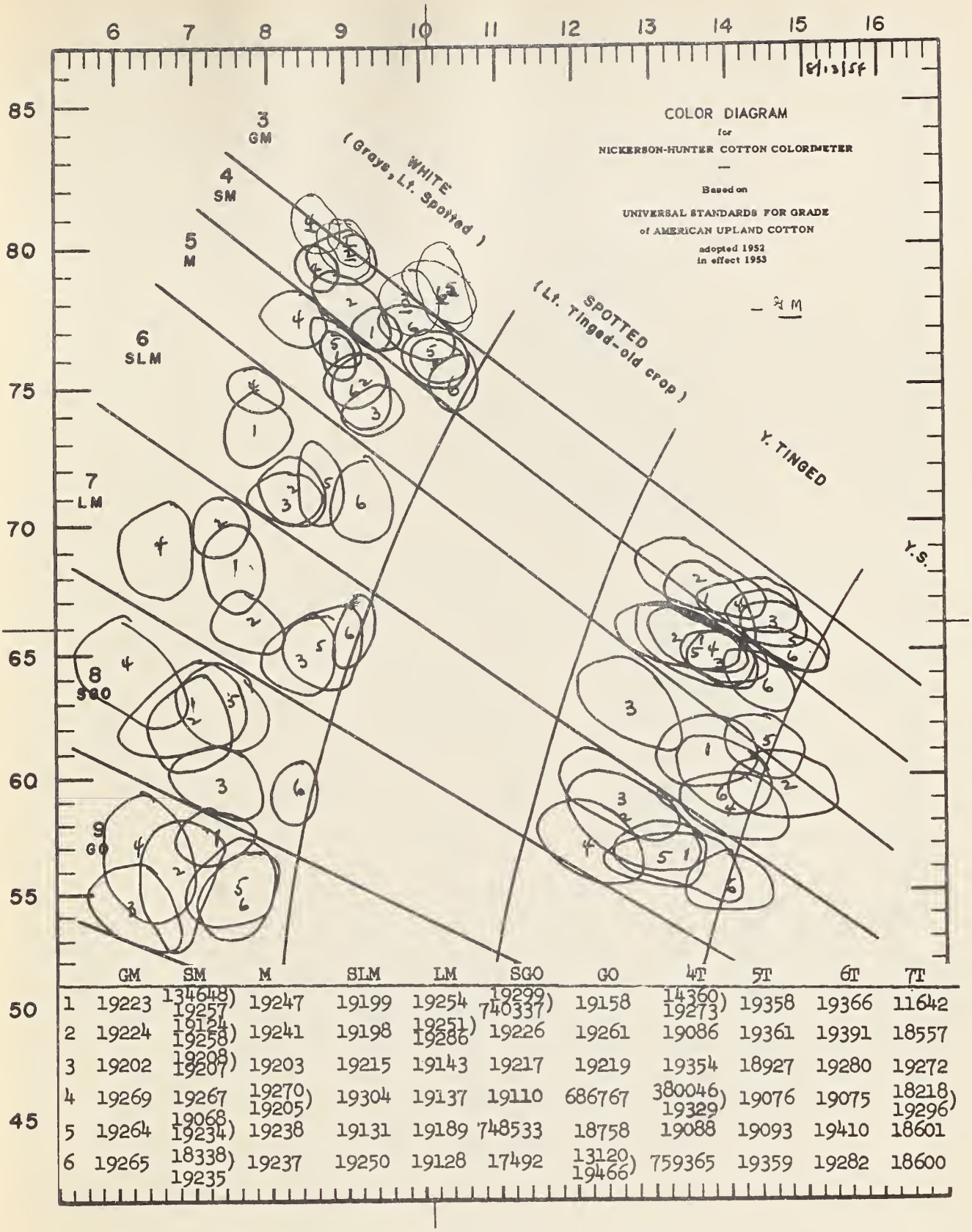


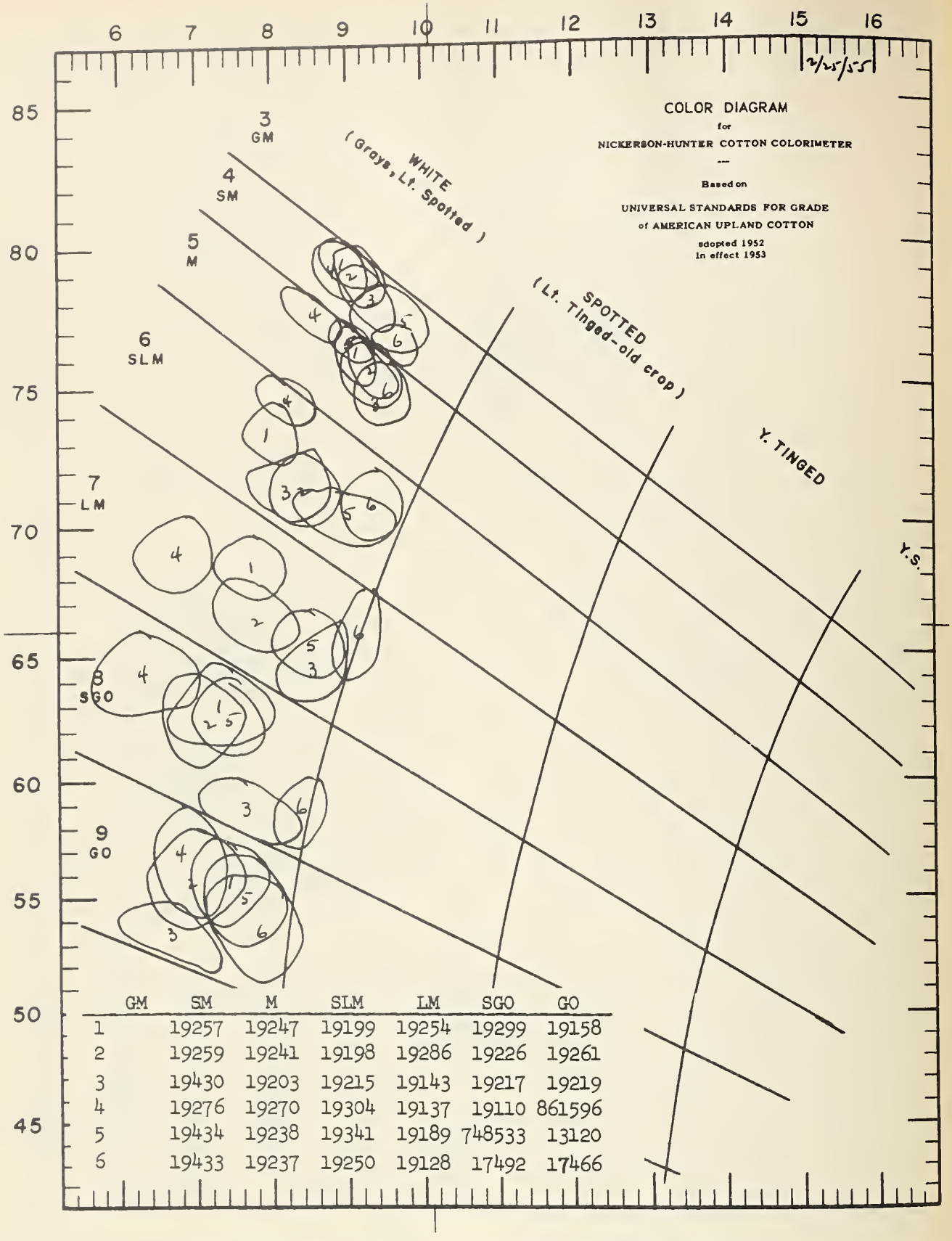
FIGURE 18.--RANDOM SETS OF WHITE AND TINGED GRADES BEFORE PHOTOGRAPHING, DECEMBER 1953.

Already the Tinged were so very much yellowed that the SLM Tinge could no longer be shipped, and the other Tinges were in question, as well as several White bales that were creeping toward the Spotted grades.



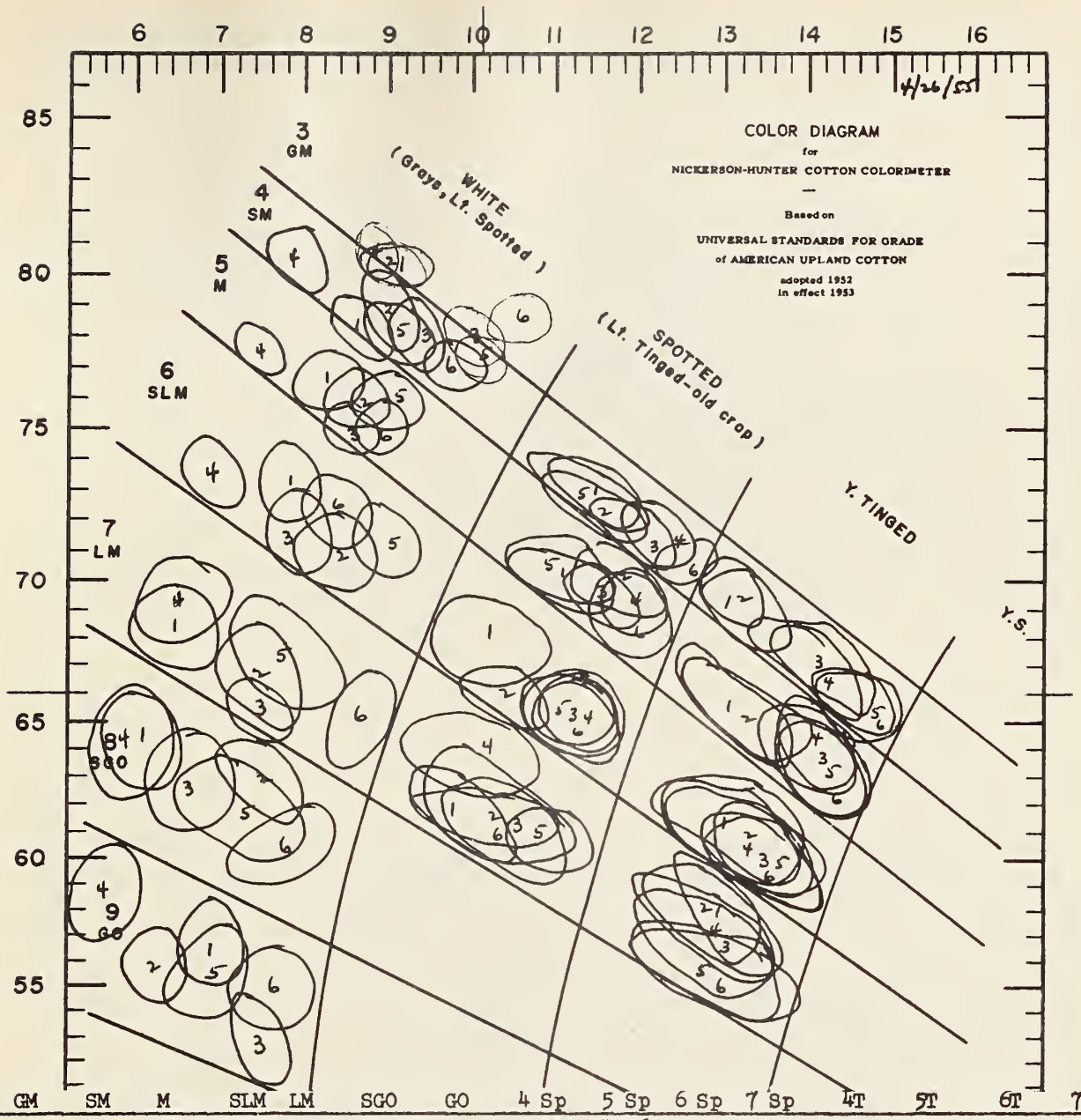
	GM	SM	M	SLM	LM	SGO	GO	4T	5T	6T	7T
1	19223	134648) 19257	19247	19199	19254	19299) 740337	19158	14360) 19273	19358	19366	11642
2	19224	19124 19258)	19241	19198	19251) 19286	19226	19261	19086	19361	19391	18557
3	19202	19208) 19207	19203	19215	19143	19217	19219	19354	18927	19280	19272
4	19269	19267 19068	19270) 19205	19304	19137	19110	686767	380046) 19329	19076	19075	18218) 19296
5	19264	19234)	19238	19131	19189	748533	18758	19088	19093	19410	18601
6	19265	18338) 19235	19237	19250	19128	17492	13120) 19466	759365	19359	19282	18600

FIGURE 19.--RANDOM SETS BEFORE PHOTOGRAPHING, AUGUST 1954.



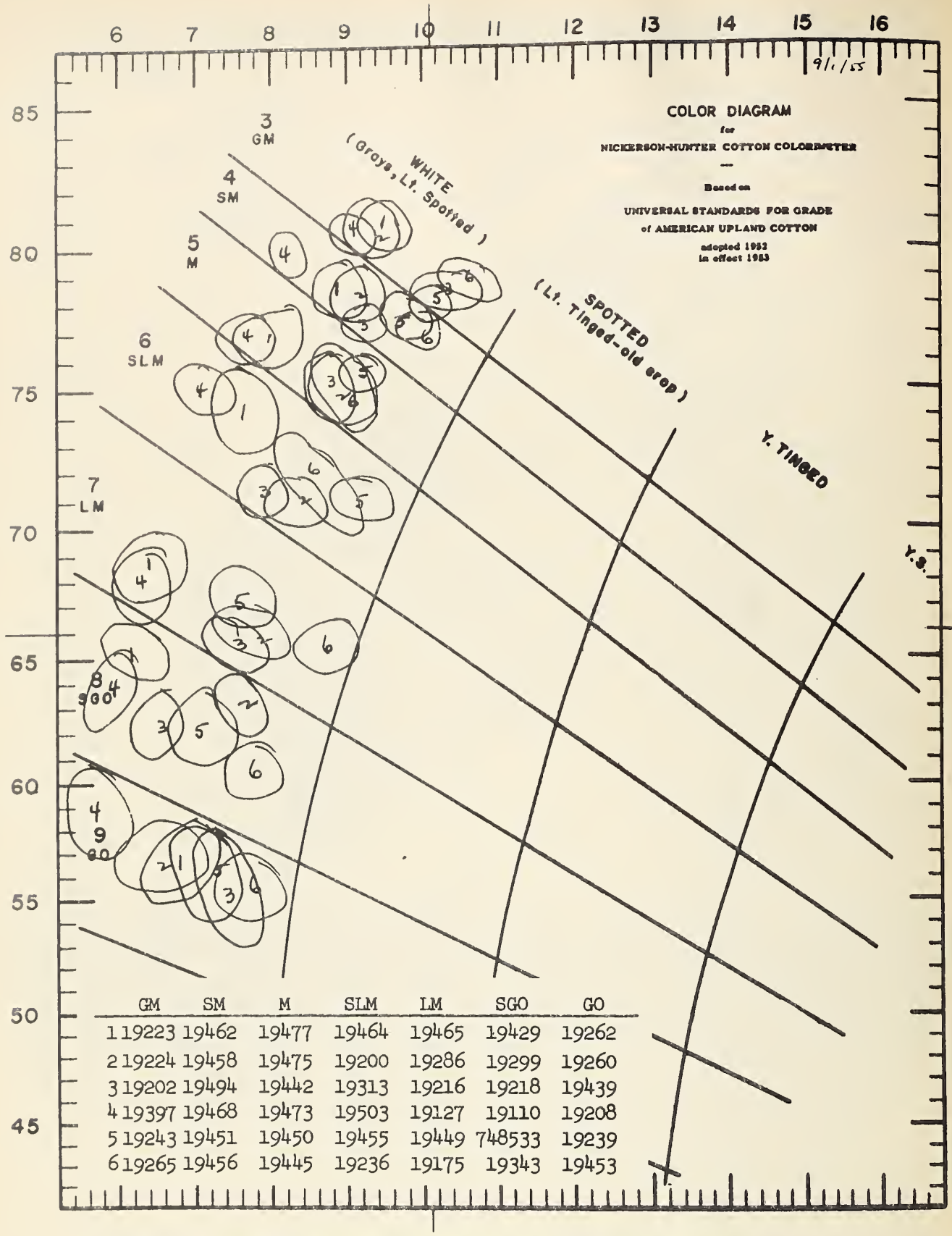
	GM	SM	M	SLM	LM	SGO	GO
1		19257	19247	19199	19254	19299	19158
2		19259	19241	19198	19286	19226	19261
3		19430	19203	19215	19143	19217	19219
4		19276	19270	19304	19137	19110	861596
5		19434	19238	19341	19189	748533	13120
6		19433	19237	19250	19128	17492	17466

FIGURE 20.--RANDOM SETS BEFORE PHOTOGRAPHING, FEBRUARY 1955.



	GM	SM	M	SLM	LM	SGO	GO	4 Sp	5 Sp	6 Sp	7 Sp	4T	5T	6T	7T
1	19223	19462	19476	19199	19465	19429	19262	19180	18556	18998	32374	19327	19347	17417	19272
2	19224	19458	19475	19200	19286	19299	19260	19192	677816	250517	2771	19327	19347	17417	19272
3	19202	19430	19442	19313	19216	19218	19439	19193	499916	10842	19181	19086	19361	19084	18557
4	19397	19468	19473	19472	19137	19110	19308	19193	19118	19108	19122	19086	19361	19084	18557
5	19243	19451	19450	19455	19449	748533	19239	19180	18556	10891	250578	255482	2657539	19297	18601
6	19265	19456	19445	19236	19175	19343	19453	542617	677808	19108	2771	255482	2657539	19297	18601

FIGURE 21.--RANDOM SETS BEFORE PHOTOGRAPHING, APRIL 1955.



	GM	SM	M	SLM	LM	SGO	GO
1	19223	19462	19477	19464	19465	19429	19262
2	19224	19458	19475	19200	19286	19299	19260
3	19202	19494	19442	19313	19216	19218	19439
4	19397	19468	19473	19503	19127	19110	19208
5	19243	19451	19450	19455	19449	748533	19239
6	19265	19456	19445	19236	19175	19343	19453

FIGURE 22.--RANDOM SETS BEFORE PHOTOGRAPHING, SEPTEMBER 1955.

THIS PAGE FOLLOWS FIGURE 22

Table 1.--Number of samples put up out of typical 1956 standards bales.

Bale position	GM	SM	M	SLM	LM	SGO	GO	4T	5T	6T	7T
1	1416	1404	1188	1044	1164	1836	1272	1212	1572	1020	1572
2	1980	1968	1764	984	1296	1212	1044				
3	1404	1488	1236	1380	1428	1776	1200	1272	(1042M 451Y	1368	(828M 252Y
4	1188	900	1740	1080	816	1188	1728				
5	996	1488	1092	1188	1020	948	1320	1020	1212	1224	960
6	960	1092	1176	1092	1416	1404	888				
Average	1324	1390	1366	1128	1190	1394	1242	1168	1420	1204	1204

Table 2.--Number of large and small boxes of each grade shipped for three years, 1953-1955, with total number of samples* required for each bale position.

Year	No. shipped	GM	SM	M	SLM	LM	SGO	GO	4T	5T	6T	7T
1953	Large boxes	-	744	873	831	690	426	292	138	150	130	116
	Small boxes	-	477	606	592	474	322	199	119	149	128	99
	Total samples	-	1965	2352	2254	1854	1174	783	395	449	388	331
1954	Large boxes	223	267	325	305	244	172	138	69	74	76	63
	Small boxes	115	261	316	303	263	181	129	78	84	77	70
	Total samples	561	795	966	918	751	525	405	216	232	229	196
1955	Large boxes	167	389	473	452	350	240	180	90	93	86	77
	Small boxes	121	378	451	447	392	256	195	82	91	87	81
	Total samples	455	1156	1397	1351	1092	736	555	262	277	259	235

* In White grades, large boxes have 2 samples for each position, small boxes have 1 sample.

NOTE: The information in the above two tables makes it possible to estimate amount of stock for current and future needs.

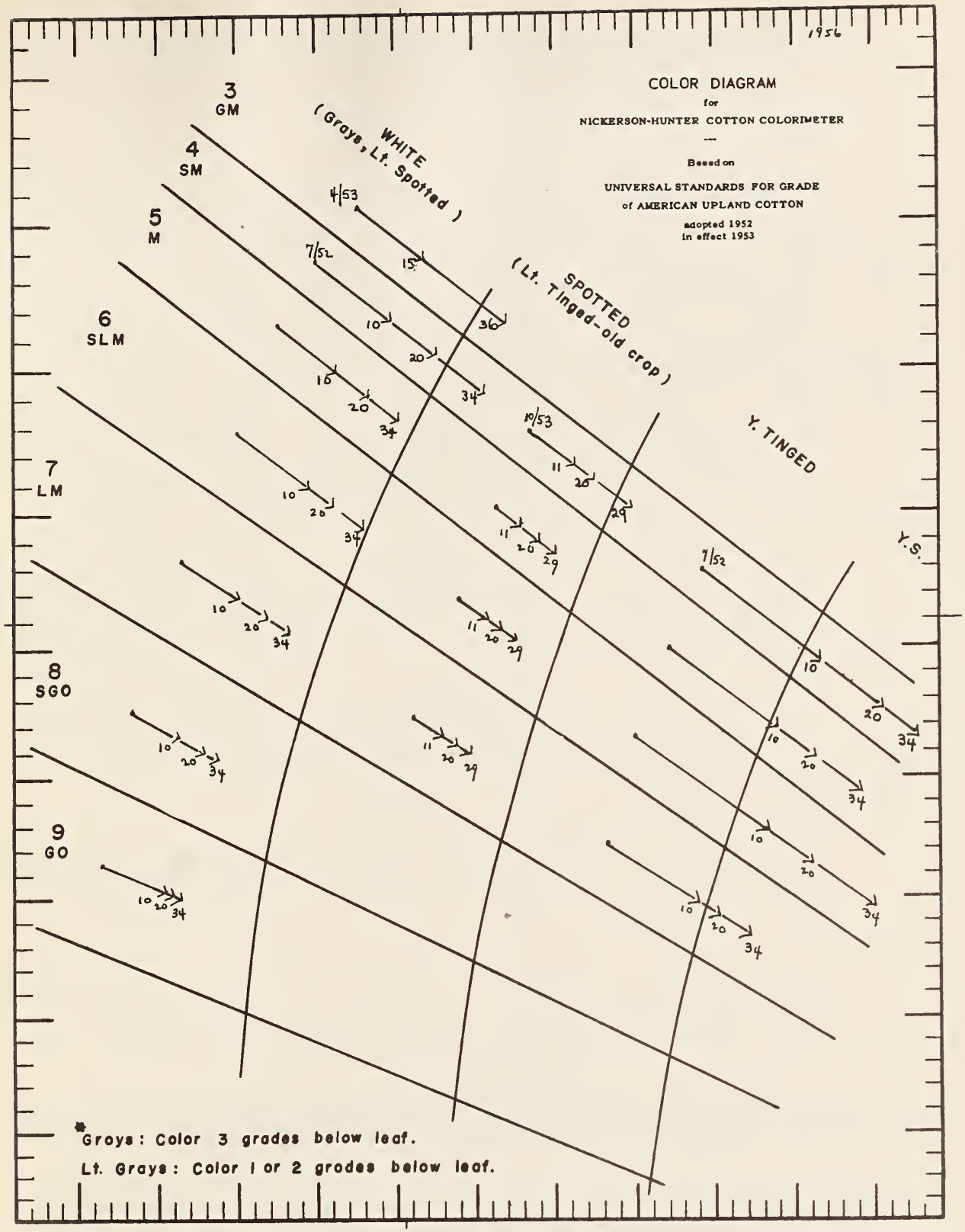


FIGURE 23.--AVERAGE COLOR CHANGE IN STORAGE FOR ORIGINAL STANDARDS AND GUIDES: 36 MONTHS FOR GM WHITE, 34 MONTHS FOR SM TO GO WHITE AND SM TO LM TINGE, 29 MONTHS FOR SPOTTED. The number of months between measurements is indicated below each arrow.

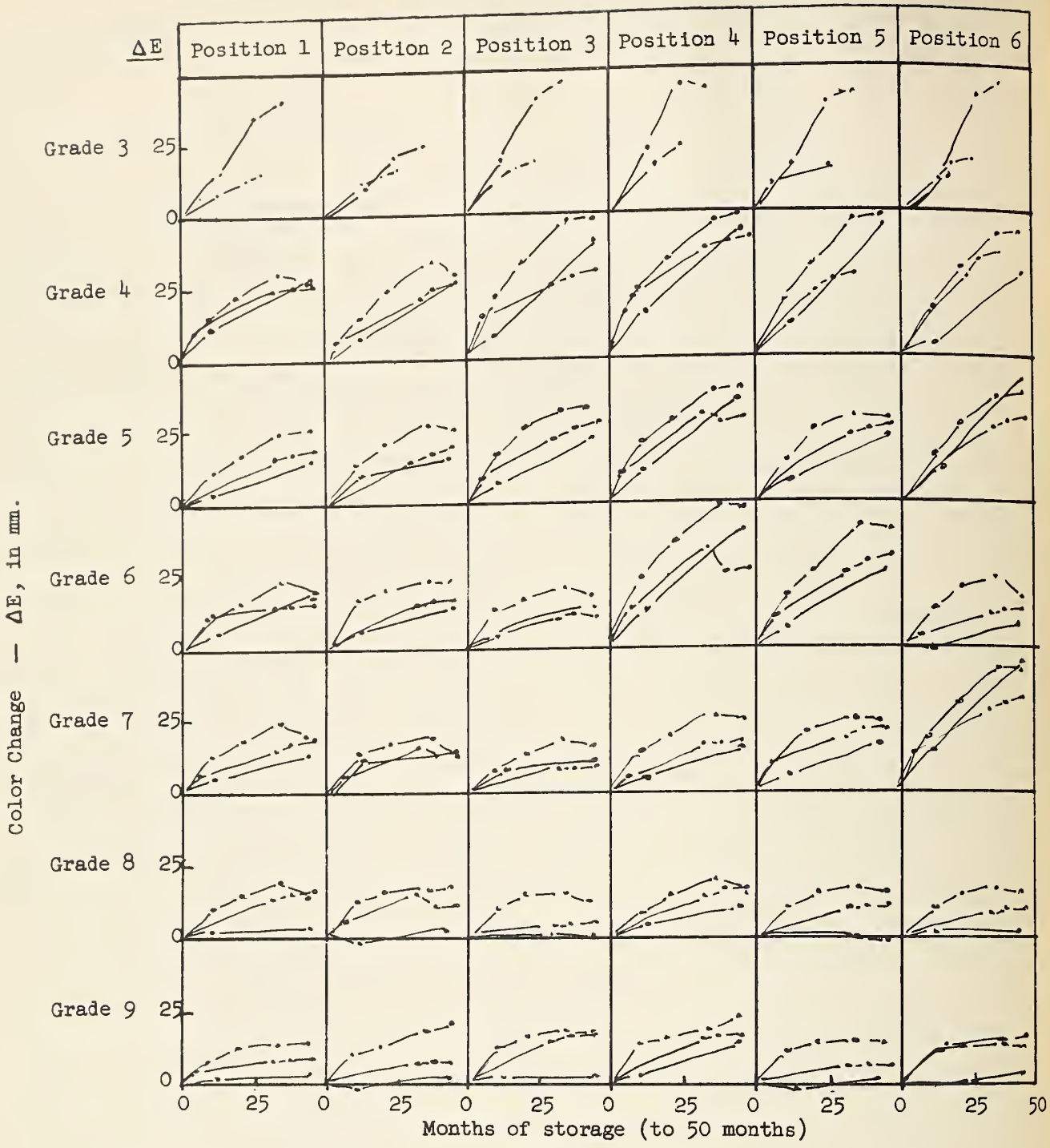


FIGURE 24.--COLOR CHANGE OF WHITE GRADE STANDARDS IN STORAGE INDICATED IN UNITS OF COLOR DIFFERENCE, ΔE, (MEASURED IN mm. OF CHANGE ON INSTRUMENT GRADE DIAGRAM) BY NUMBER OF MONTHS HELD IN WASHINGTON.

Change is illustrated for each of 6 bale positions in standard grades. Top grades change more than low grades, and there seems more levelling off by the second year for the lower than for the higher grades.

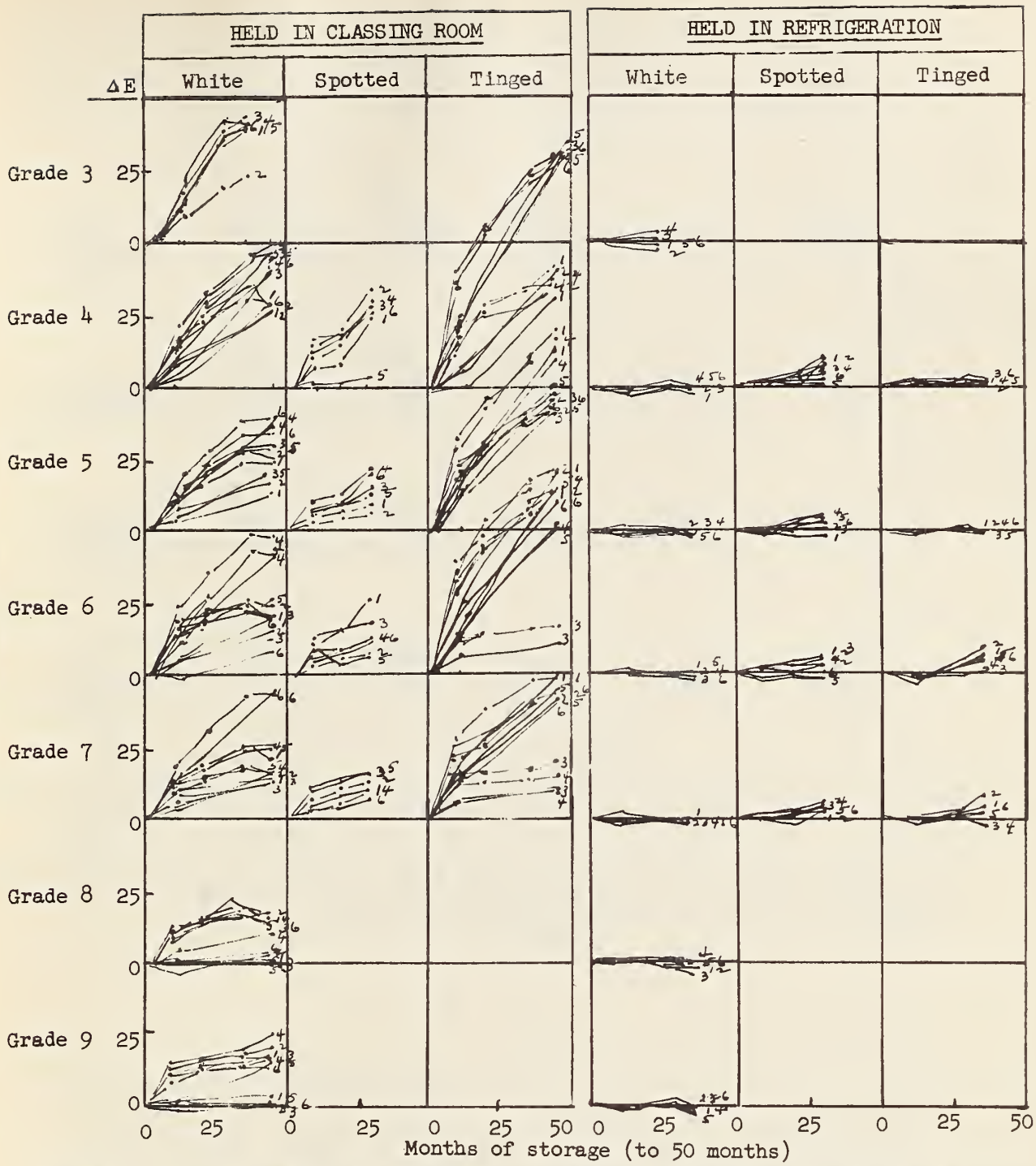


FIGURE 25.--COLOR CHANGE, ΔE, BY MONTHS OF STORAGE, INDICATED FOR EACH BALE IN WHITE, SPOTTED, AND TINGED GRADES HELD IN WASHINGTON UNDER CLASSING ROOM CONDITIONS, AND UNDER REFRIGERATION AT ABOUT 38°.

Refrigeration either slows down, or inhibits, color change. A controlled experiment, under several conditions of humidity and temperature, will be carried out 1956-1959 on cottons accepted at 1956 conference, so that by 1959 it should be possible to specify optimum conditions for temperature and humidity control for storing cotton standards. These are not now known.

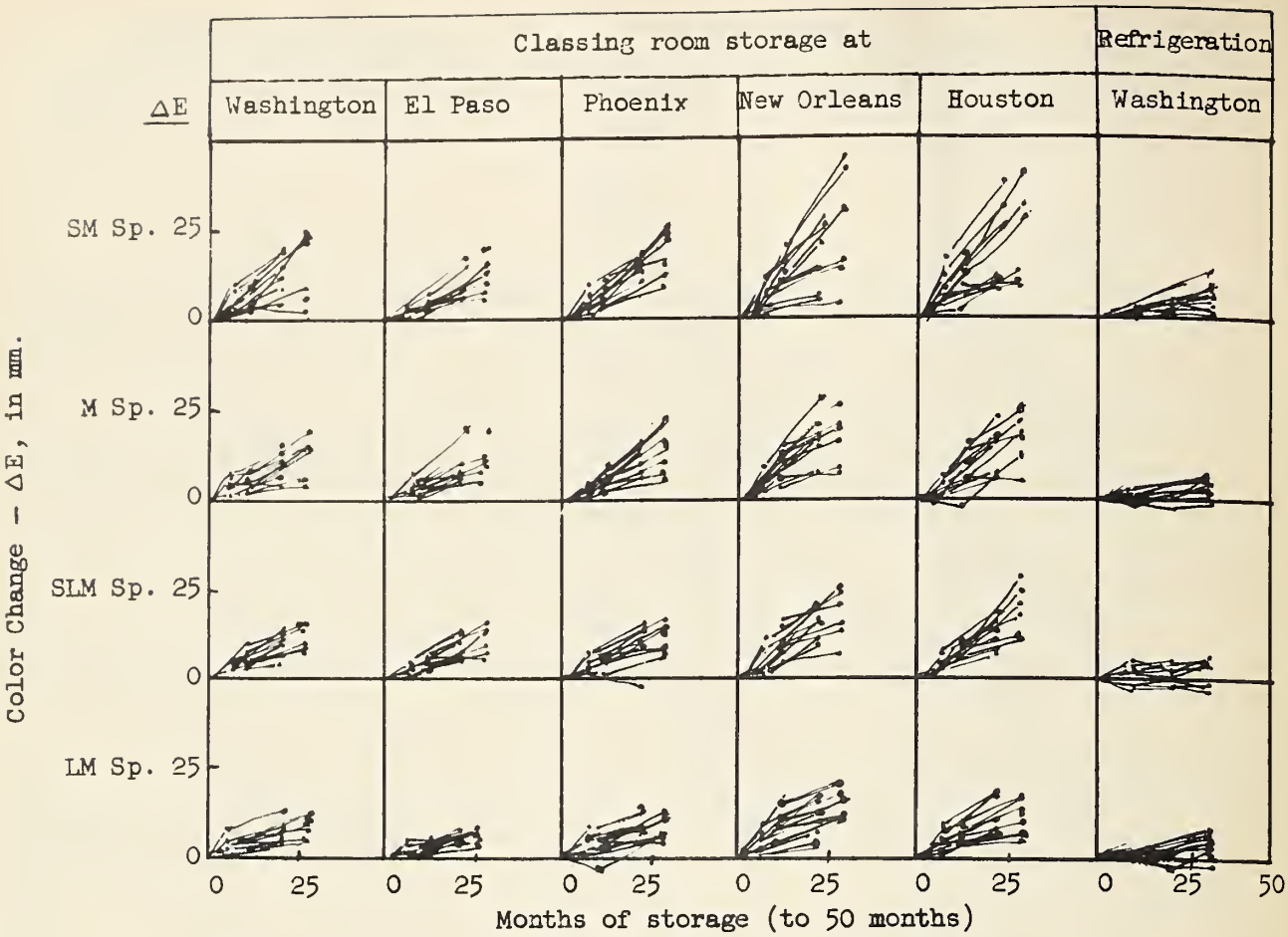
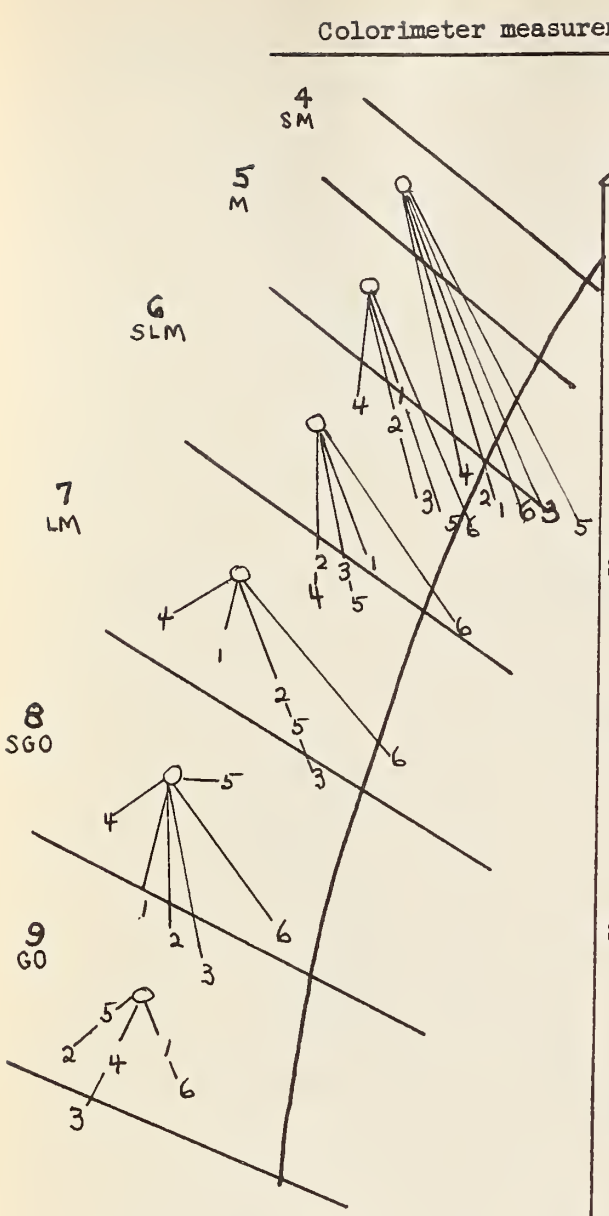


FIGURE 26.--COLOR CHANGE, ΔE, BY MONTHS OF STORAGE, IN SETS OF SPOTTED GUIDE BOXES STORED IN SEVERAL LOCATIONS SINCE 1953 COTTON GRADE STANDARDS CONFERENCE.

Following storage in five classing rooms of Cotton Division and in refrigeration, about 38°, some sets were measured 8/53, 4/54, and 5/55 (a maximum of 21 months), others 8/53, 7/55, and 3/56 (a maximum of 29 months).



Colorimeter measurements	Classer Comparisons		
	Classer 1 (HCS)	Classer 2	Classer 3
SM:	M 1 grade low	SM	M except #6
M:	SLM 1 grade low	M	M
SLM:	1/2 grade low	SLM	SLM
LM:	SGO dusty	LM	LM
SGO:	GO dusty	SGO	SGO
GO:	GO equal dusty	GO	GO

FIGURE 27.--COLORIMETER AND CLASSER COMPARISONS ON A TYPICAL SET OF WHITE STANDARDS RETURNED AFTER USE.

Although color definitely goes down as standards are used in classing rooms, classers seldom recognize it, for they recognize leaf and then assume color is unchanged. Color classed against such boxes may be too easy by a grade or more.

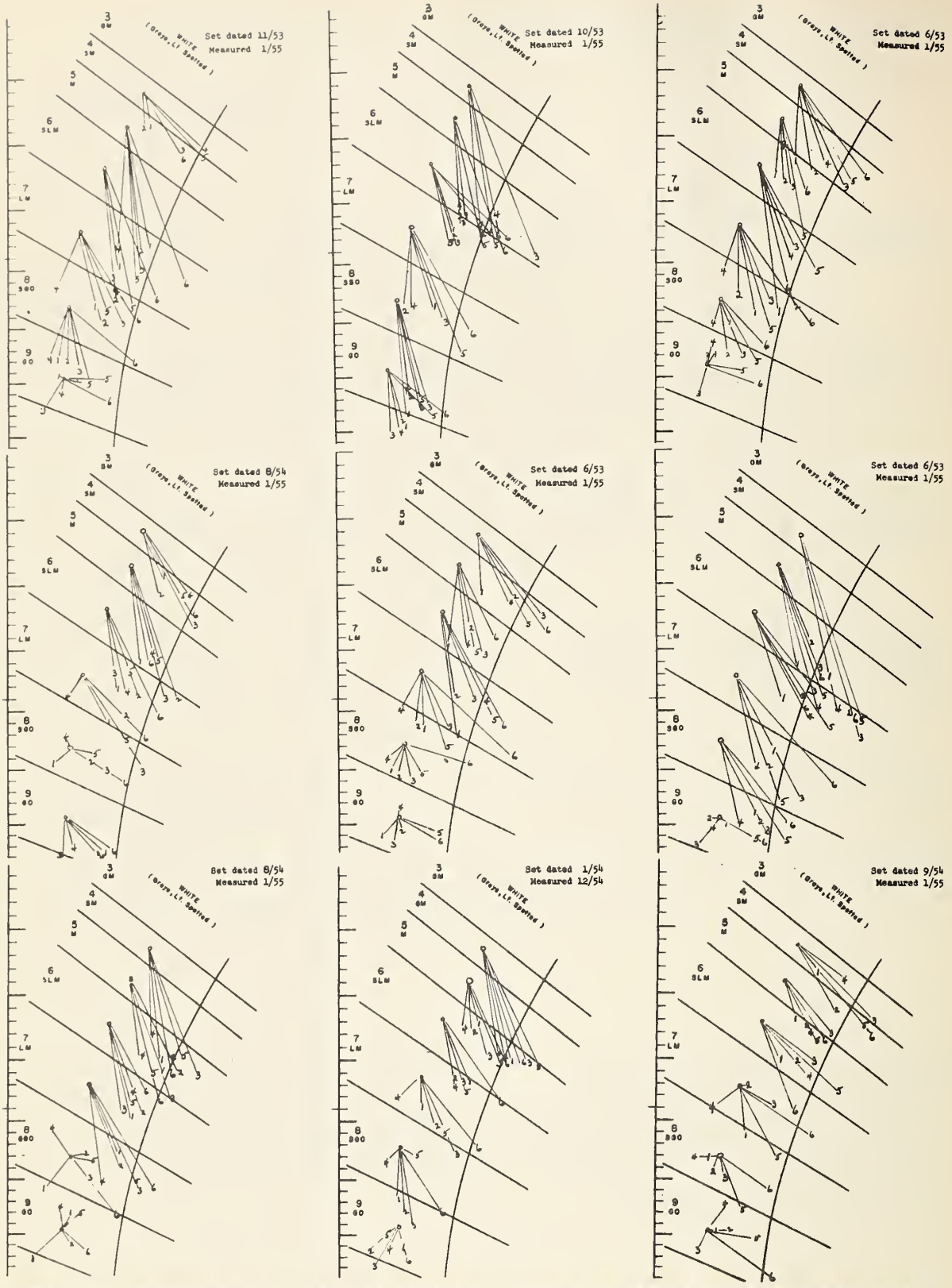


FIGURE 28.--MEASUREMENTS ON SETS OF STANDARDS TYPICAL OF THOSE RETURNED AFTER USE.

Each set shown is from a different office, with each classing area represented. A study in 1955 of returned standards shows that this amount of color change through dustiness, from being open in a classing room while in use, is not uncommon for standards used a great deal. This change, so easily overlooked, even by experienced classers, is another good reason why standards should not be used more than one season, sometimes no longer than one month. None of these boxes were more than 18 months old when returned for study. The dates of issue and of measurement after return are shown for each set.

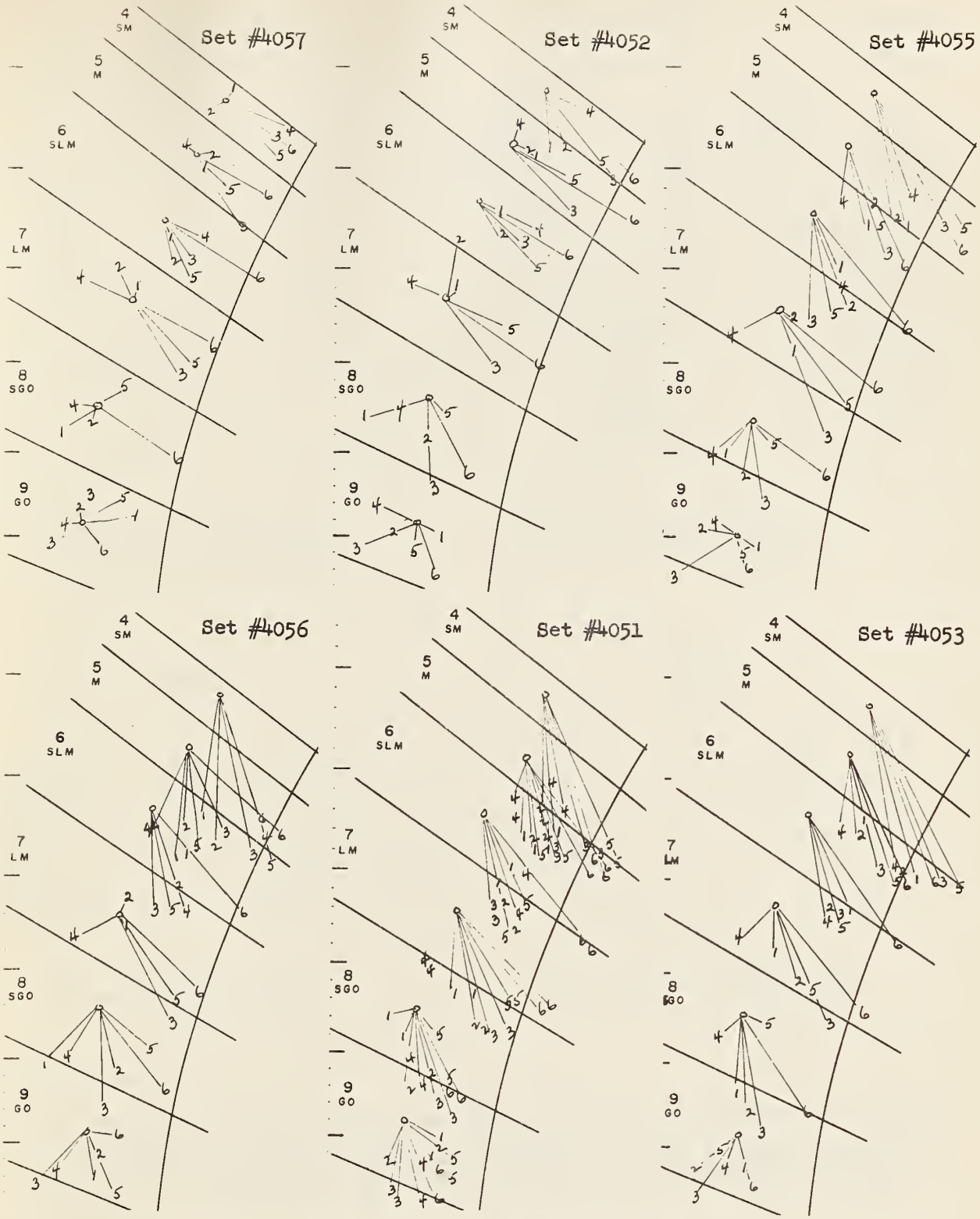
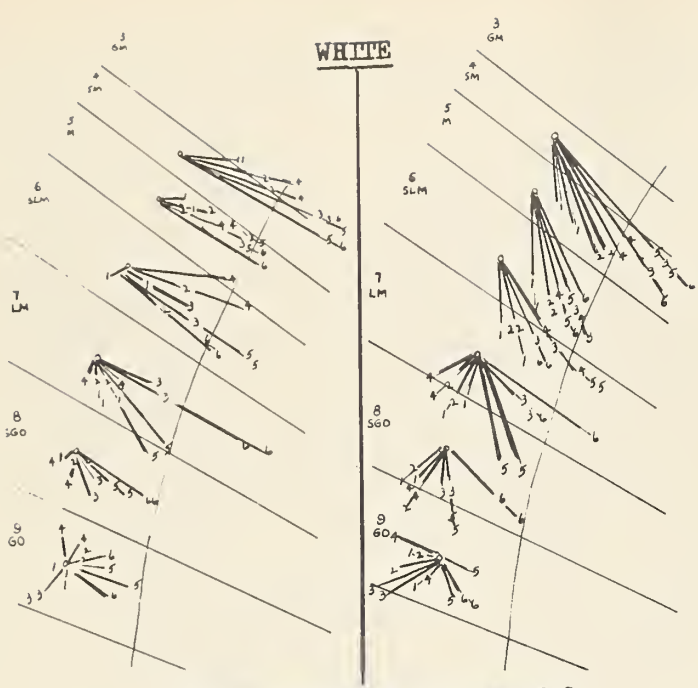
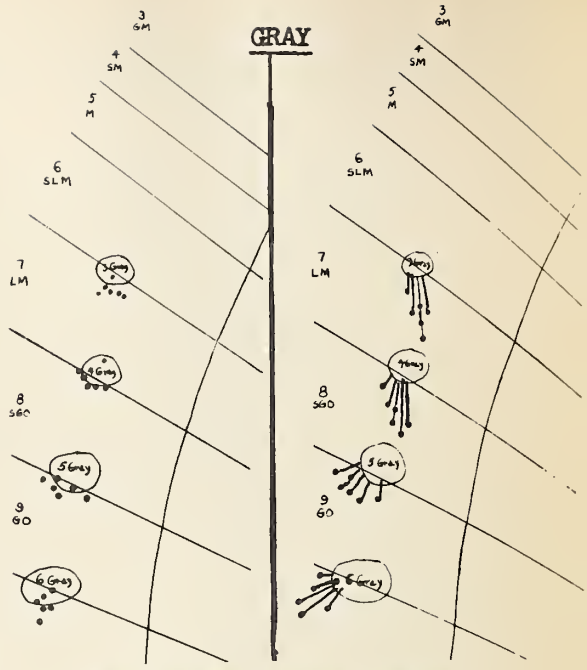


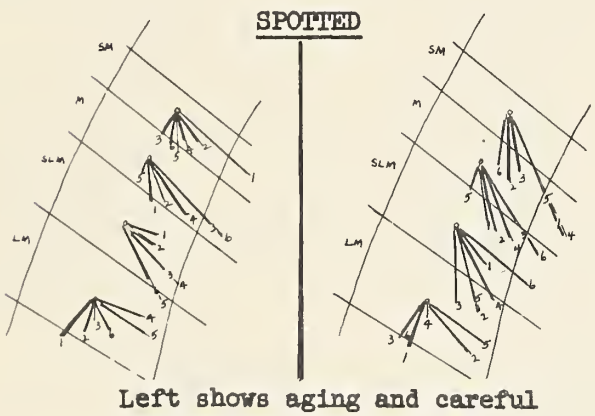
FIGURE 29.--MEASUREMENTS OF STANDARDS RETURNED AFTER USE IN ONE OFFICE IN ONE SEASON. Most of them show hard use. They are arranged to show increasing amount of change caused by use.



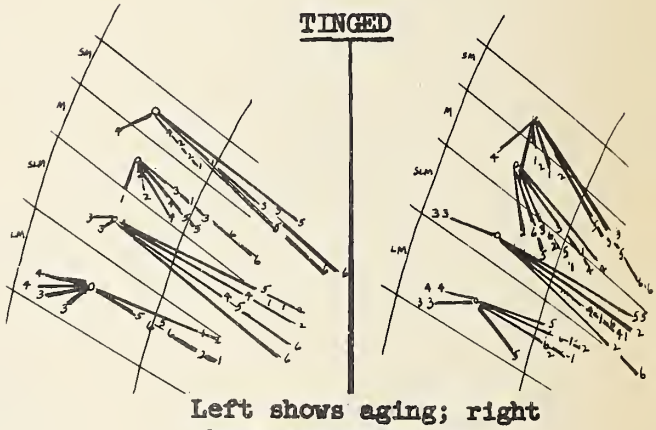
Left shows aging and careful use; right shows aging and hard use.



Left shows little change with aging; right shows change through use.



Left shows aging and careful use; right shows aging and hard use.



Left shows aging; right shows aging, and use of two top grades.

FIGURE 30.--MEASUREMENTS ON RETURNED STANDARDS, AFTER USE OF 18 MONTHS OR LESS.

Sets are shown in pairs to illustrate two types of change, yellowing by aging, and darkening by dustiness caused by use of standards.

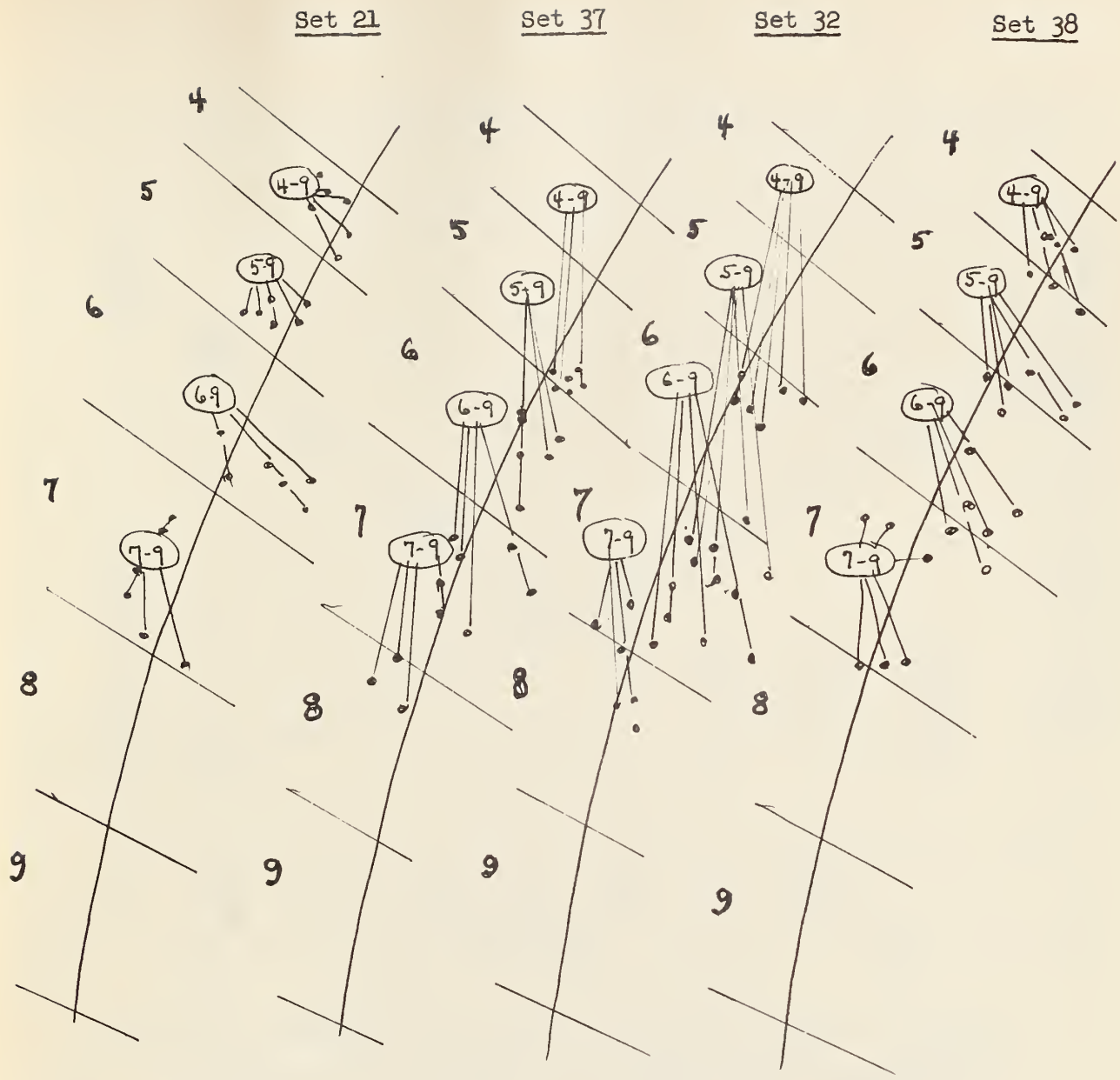


FIGURE 31.--COLORIMETRIC COMPARISONS ON TYPICAL SETS OF LIGHT SPOTTED BOXES RETURNED AFTER USE.

The grade number is circled at the color position of the bales originally used in these boxes. Set 21 shows little use; the others show change, the majority yellowing into Spotted color, also becoming low in color through dustiness. The figure 9 used with the grade number, is a code number for Light Spotted.

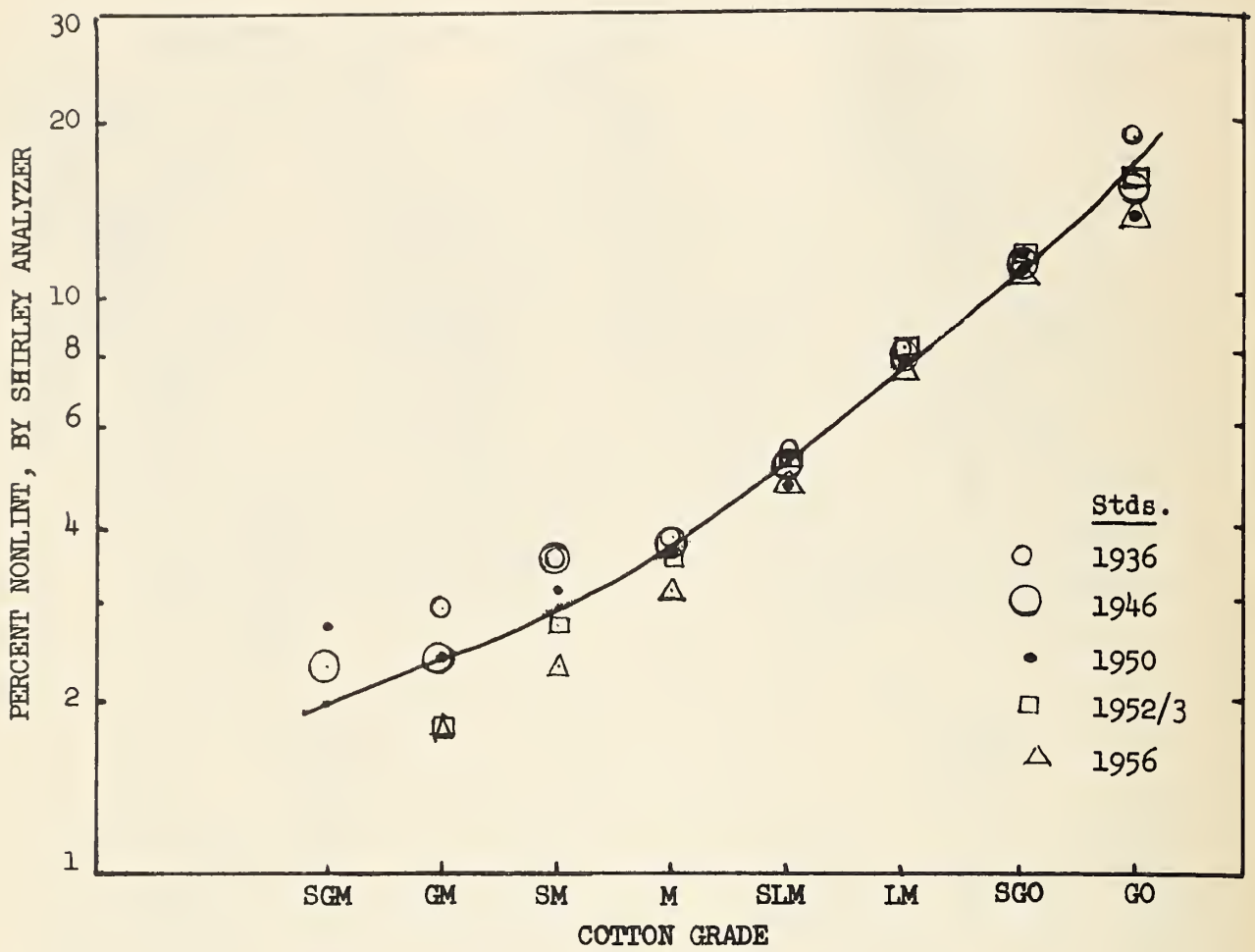


FIGURE 32.--TRASH ANALYSIS FOR BALES USED IN STANDARDS, 1936-1956.

See Note following table 4 for discussion and explanation.

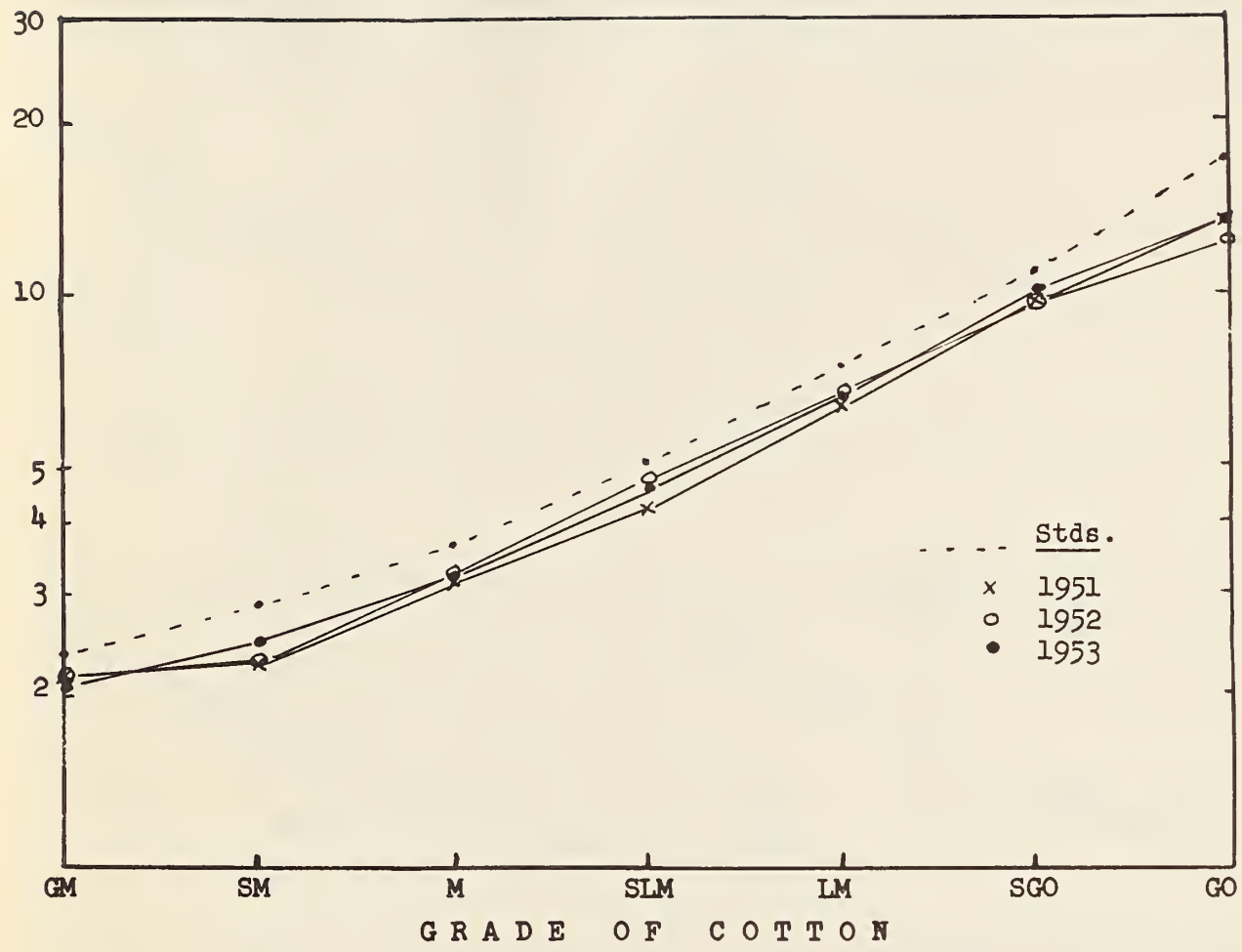


FIGURE 33.--TRASH (NONLINT) CONTENT OF COTTONS CLASSED IN WHITE GRADES: U. S. COTTON CROPS 1951-53.

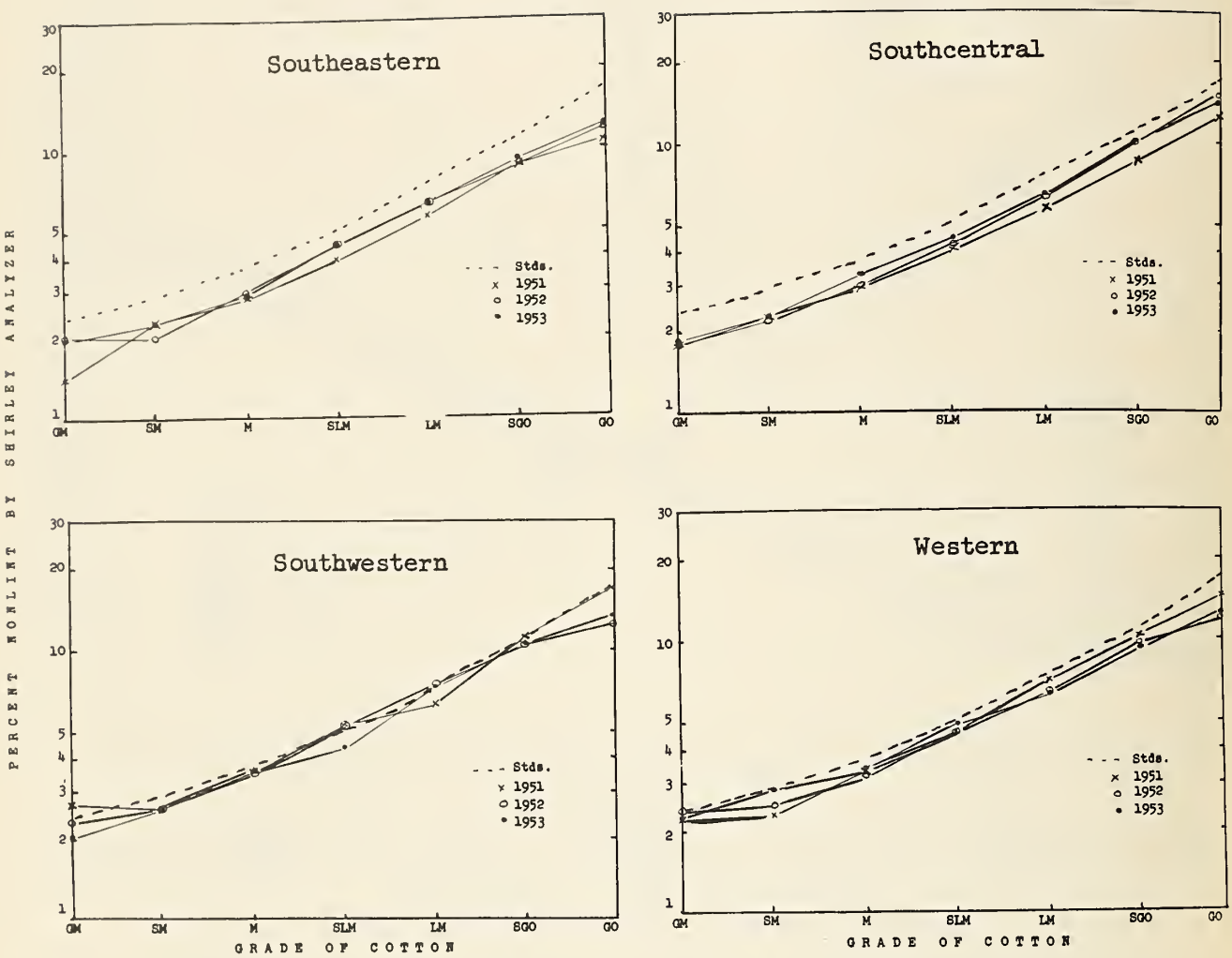


FIGURE 34.--TRASH (NONLINT) CONTENT OF COTTONS CLASSED IN WHITE GRADES: BY COTTON GROWING AREAS IN THE U. S., FOR THREE CROP YEARS.

THIS PAGE FOLLOWS FIGURE 34

Table 3.--Shirley Analyzer trash in grade standards bales, 1936, 1946, 1950, 1952/53, and 1956, and in grade surveys 1947, 1950, 1951, 1952, and 1953.

Year	GM	SM	M	SLM	LM	SGO	GO
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Stds. bales							
1936	2.9	3.6	3.8	5.4	8.1	11.0	18.6
1946	2.4	3.5	3.7	5.1	7.7	11.2	15.2
1950	2.4	3.1	3.6	4.7	7.6	11.7	13.5
1952/53	1.8	2.7	3.5	5.2	8.1	11.5	15.3
1956	1.8	2.3	3.1	4.7	7.3	10.7	13.3
Grade Survey							
1947	3.5	4.0	4.6	5.5	7.8	11.0	15.3
1950	1.8	2.7	3.5	5.1	7.2	11.4	15.4
1951	2.2	2.3	3.2	4.3	6.5	9.8	13.5
1952	2.2	2.3	3.3	4.8	6.8	9.6	12.1
1953	2.1	2.5	3.2	4.6	6.7	10.2	13.4

Table 4.--Shirley Analyzer trash for top and bottom of bales in 1956 standards.

Bale position	GM	SM	M	SLM	LM	SGO	GO	4T	5T	6T	7T
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Std.	2.4	2.9	3.7	5.1	7.6	11.0	17.0				
1	1.6	2.5	3.4	5.0	6.6	10.0	13.5	3.6	7.6	10.1	6.4
	1.6	2.2	2.8	4.2	6.8	10.9	13.3	3.9	6.3	11.9	6.2
2	2.2	2.3	2.7	4.7	6.5	11.6	12.2				
	2.8	2.0	3.0	5.0	6.7	10.9	12.8				
3	1.7	1.9	2.5	5.1	8.7	11.2	13.3	4.1	4.8	8.6	10.8
	1.2	1.7	2.3	5.6	7.8	11.1	11.2	4.2	4.2	10.3	11.0
4	2.1	2.3	4.0	5.8	8.4	10.0	12.2				
	2.2	3.0	4.0	5.0	8.7	9.1	12.3				
5	1.7	3.0	3.4	4.8	6.9	8.7	16.4	3.1	3.8	8.6	8.7
	1.7	2.8	3.0	4.1	7.1	8.7	17.7	2.9	4.0	7.4	8.7
6	1.3	2.0	3.3	3.5	7.3	14.2	12.7				
	1.6	1.9	3.0	3.5	6.3	11.8	12.5				
Average	1.8	2.3	3.1	4.7	7.3	10.7	13.3	3.6	5.1	9.5	8.6

NOTE: Compared to the average of past standards, bales for practically all 1956 grades are lighter in trash than intended when bales were purchased. Trash has had to be added to some boxes, but this has been kept to a minimum in order to hold to the principle of a natural standard.

Trash studies during the next three years (more intensive with a new Cotton Trash Meter) should provide information for judging whether current cleaning methods at the gin are resulting in so much less trash that adjustments need be made in standards.

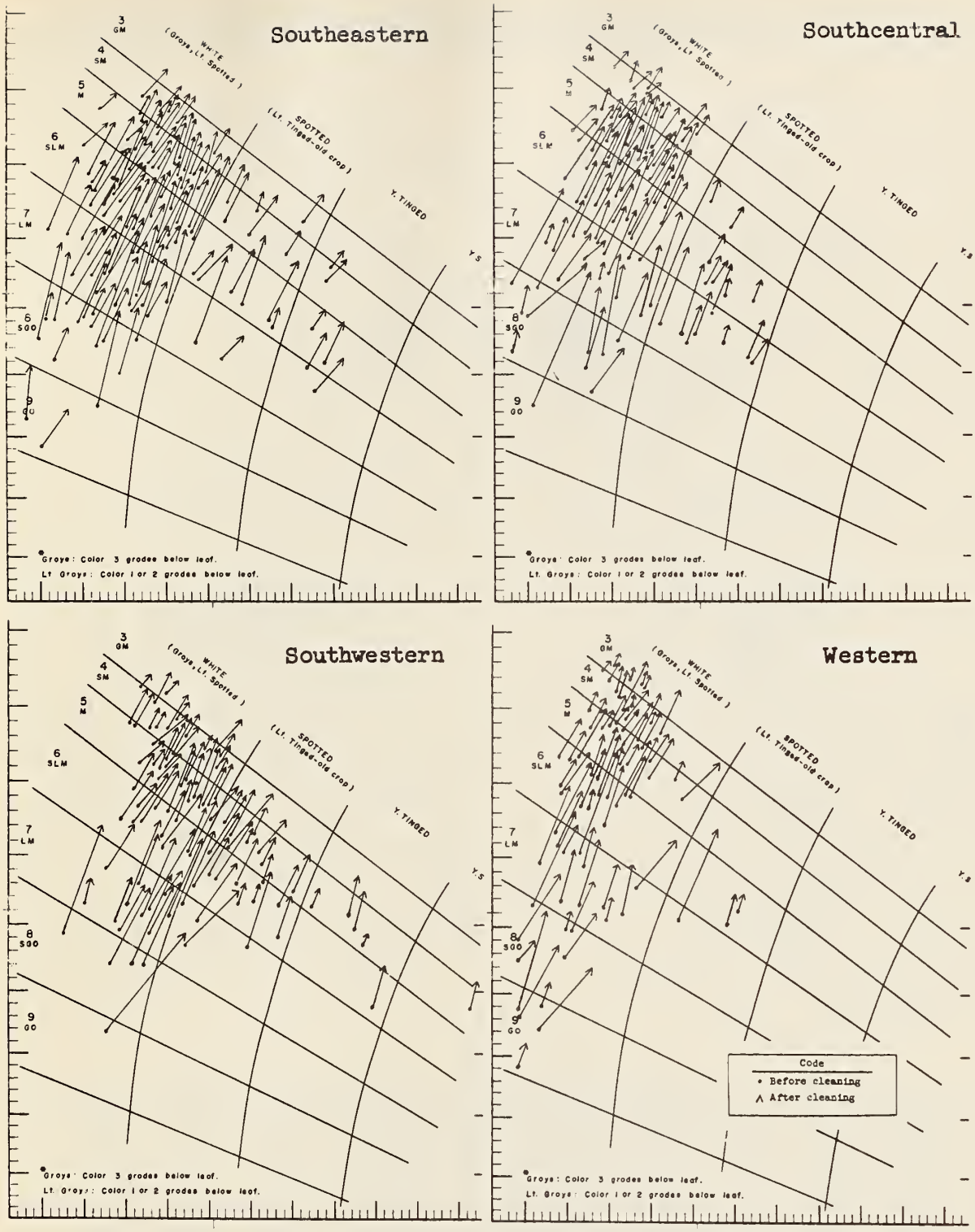
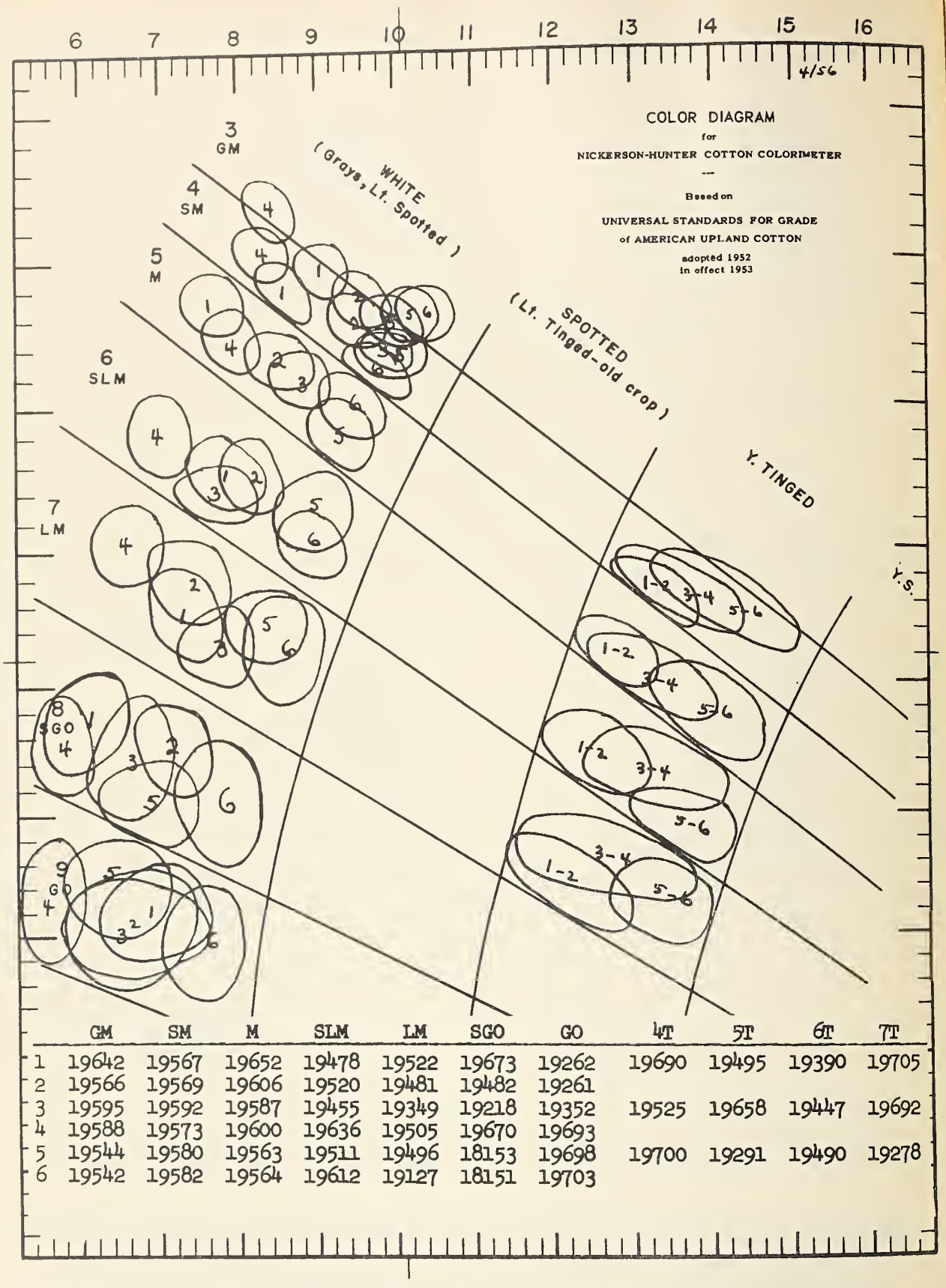


FIGURE 35.--COLOR OF LINT COTTON AFTER REMOVAL OF TRASH (NONLINT) CONTENT.

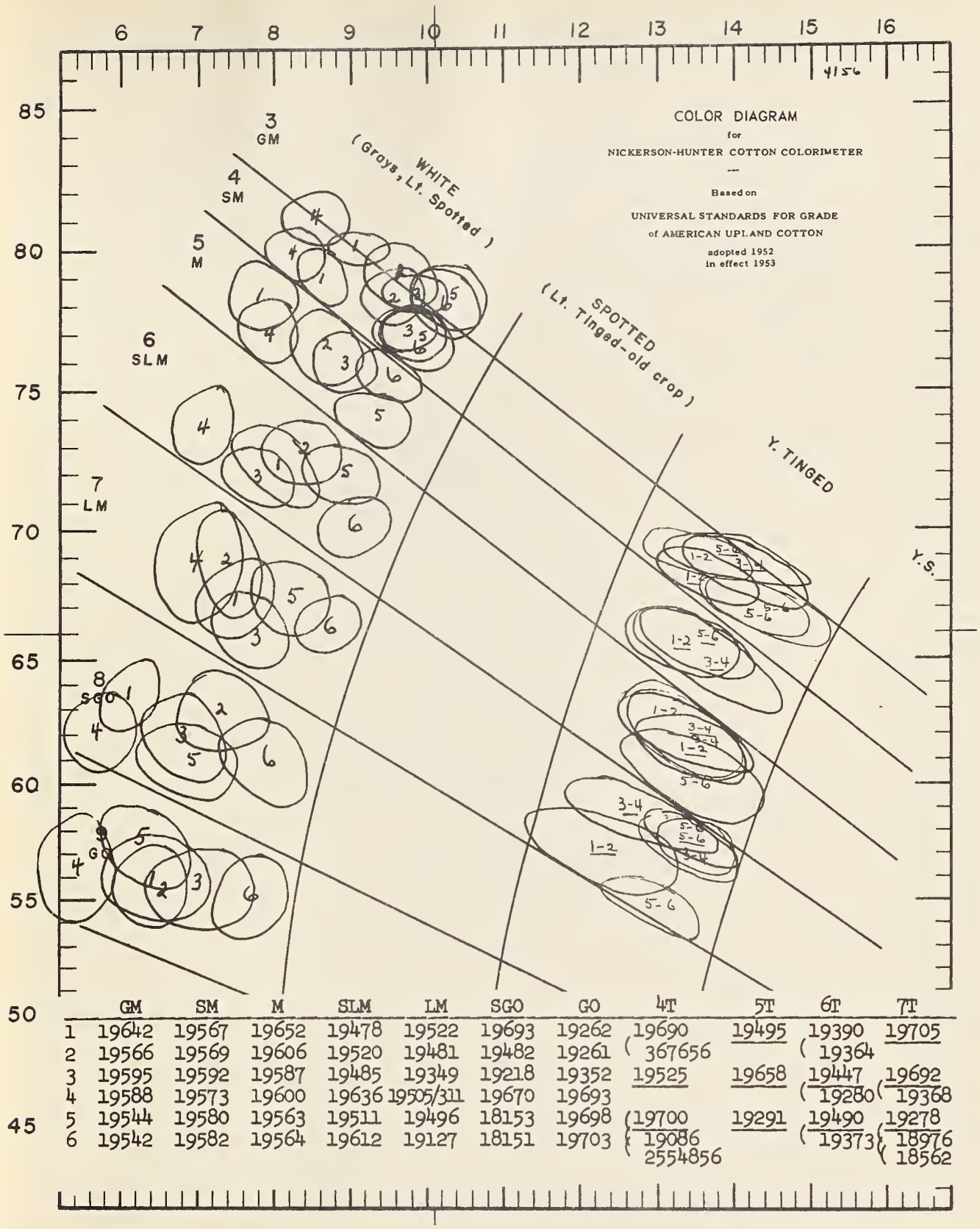
Color improvement in typical samples from the 1952 crop is shown by measurements before and after cleaning on the Shirley Analyzer.



	GM	SM	M	SLM	LM	SGO	GO	4T	5T	6T	7T
1	19642	19567	19652	19478	19522	19673	19262	19690	19495	19390	19705
2	19566	19569	19606	19520	19481	19482	19261				
3	19595	19592	19587	19455	19349	19218	19352	19525	19658	19447	19692
4	19588	19573	19600	19636	19505	19670	19693				
5	19544	19580	19563	19511	19496	18153	19698	19700	19291	19490	19278
6	19542	19582	19564	19612	19127	18151	19703				

FIGURE 36.--RANGE OF COLOR IN 12-SAMPLE STANDARDS BOXES PUT UP FOR THE 1956 UNIVERSAL GRADE STANDARDS CONFERENCE.

These measurements were made on 110 sets of large boxes after they were put up for the conference.



	GM	SM	M	SLM	LM	SGO	GO	4T	5T	6T	7T
1	19642	19567	19652	19478	19522	19693	19262	19690	19495	19390	19705
2	19566	19569	19606	19520	19481	19482	19261	367656		19364	
3	19595	19592	19587	19485	19349	19218	19352	19525	19658	19447	19692
4	19588	19573	19600	19636	19505/311	19670	19693			19280	19368
5	19544	19580	19563	19511	19496	18153	19698	19700	19291	19490	19278
6	19542	19582	19564	19612	19127	18151	19703	19086		19373	18976
								2554856			18562

FIGURE 37.--RANGE OF COLOR IN 6-SAMPLE GUIDE BOXES PUT UP FOR THE 1956 UNIVERSAL GRADE STANDARDS CONFERENCE.

These are based on 25 sets of small boxes. The same bales are used in both large and small boxes as long as the supply lasts, but in some cases, particularly in the Tinges, a second and even third bale had to be used to complete the large supply of boxes needed for the 1956 standards. (Bale numbers are given for USDA convenience.)

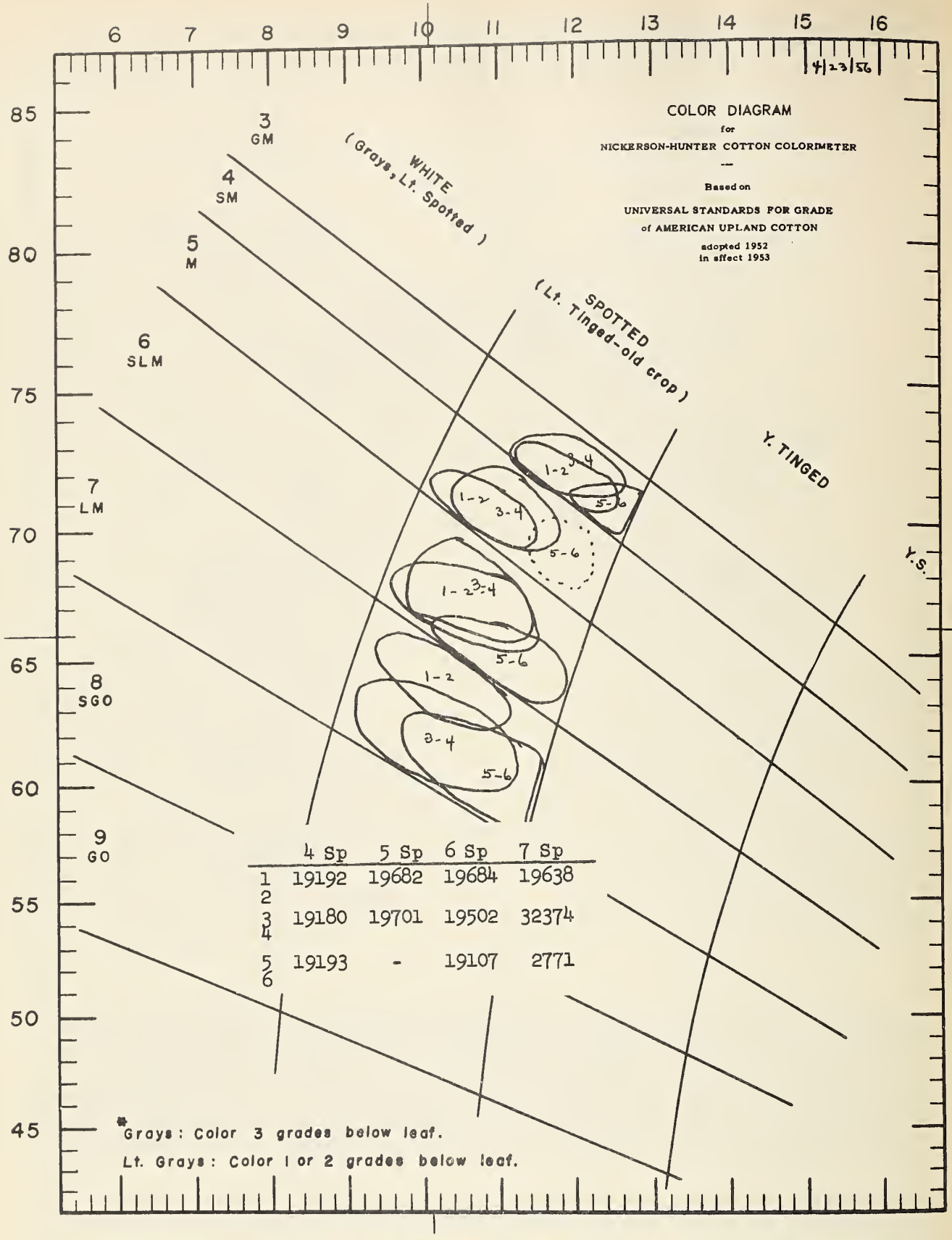


FIGURE 38.--RANGE OF COLOR IN SPOTTED BOXES PUT UP FOR THE 1956 CONFERENCE. For Middling Spotted the 5-6 position is intended to be as shown in the dotted area. The bale put up in this position was not satisfactory, and a new bale was thereafter bought to replace it. It had not been received when this diagram was prepared.

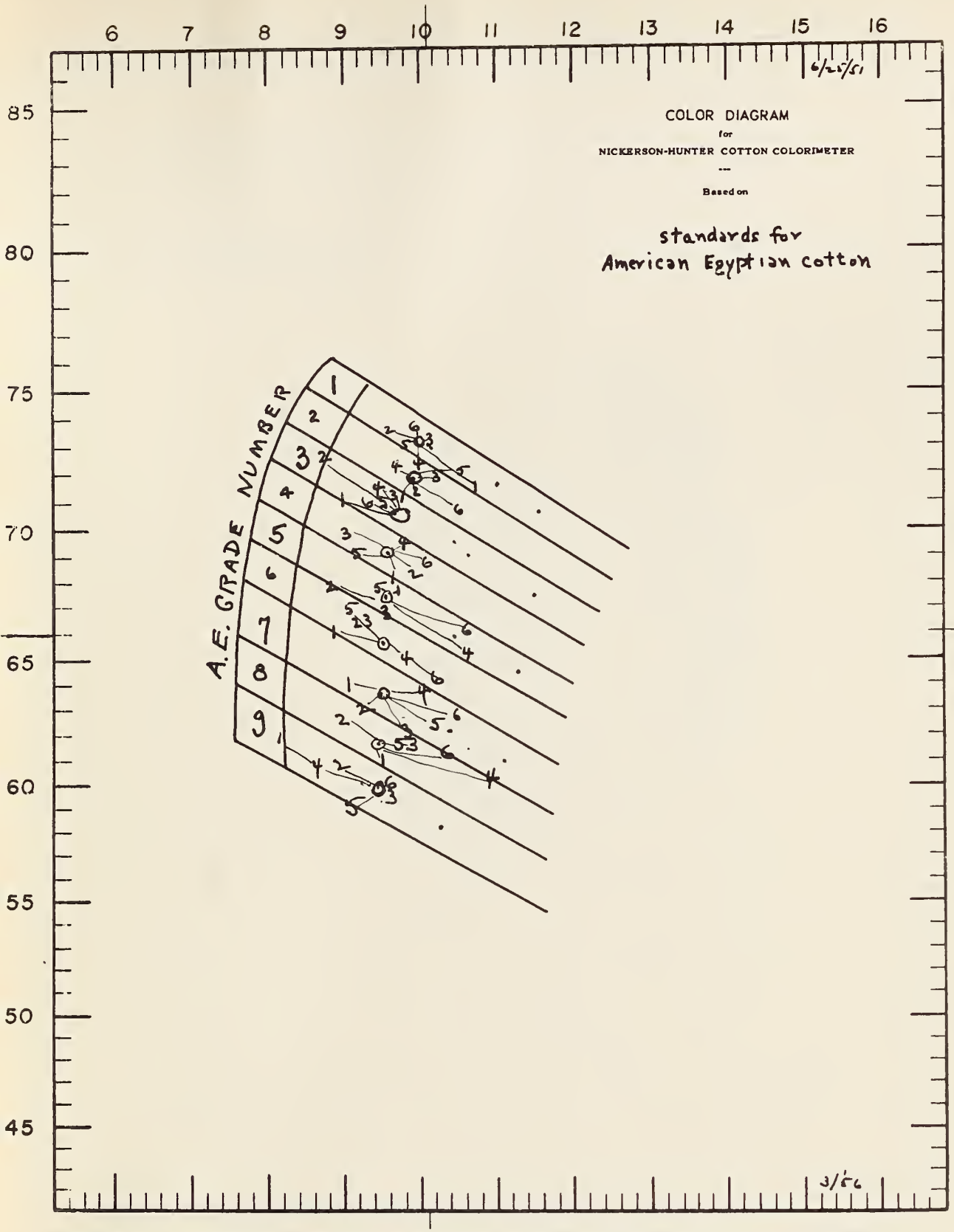


FIGURE 39.--ORIGINAL STANDARDS FOR GRADE OF AMERICAN EGYPTIAN COTTON, 1951.

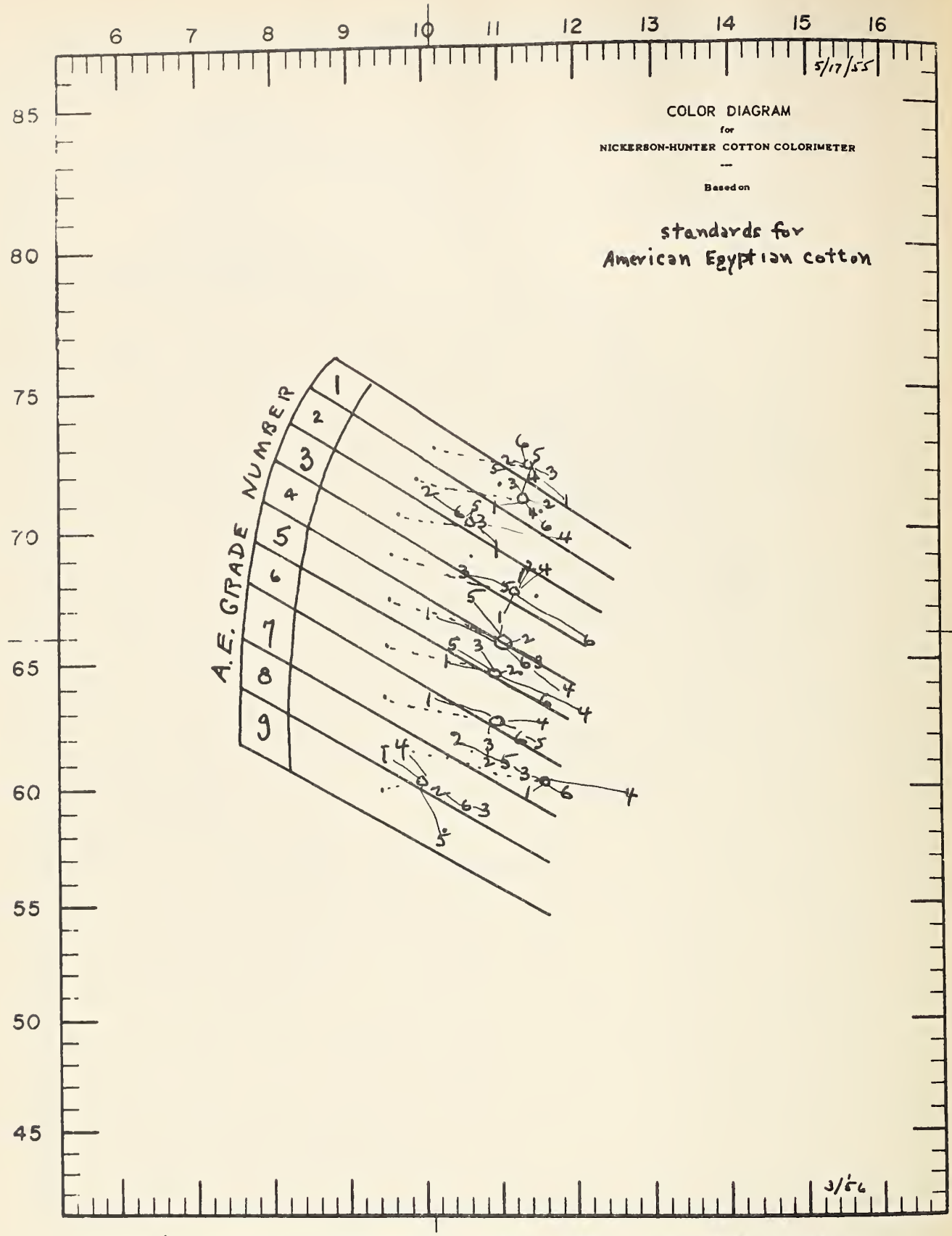


FIGURE 40.--ORIGINAL STANDARDS FOR GRADE OF AMERICAN EGYPTIAN COTTON, AS MEASURED MAY 1955, FOUR YEARS AFTER IT WAS ORIGINALLY PREPARED.

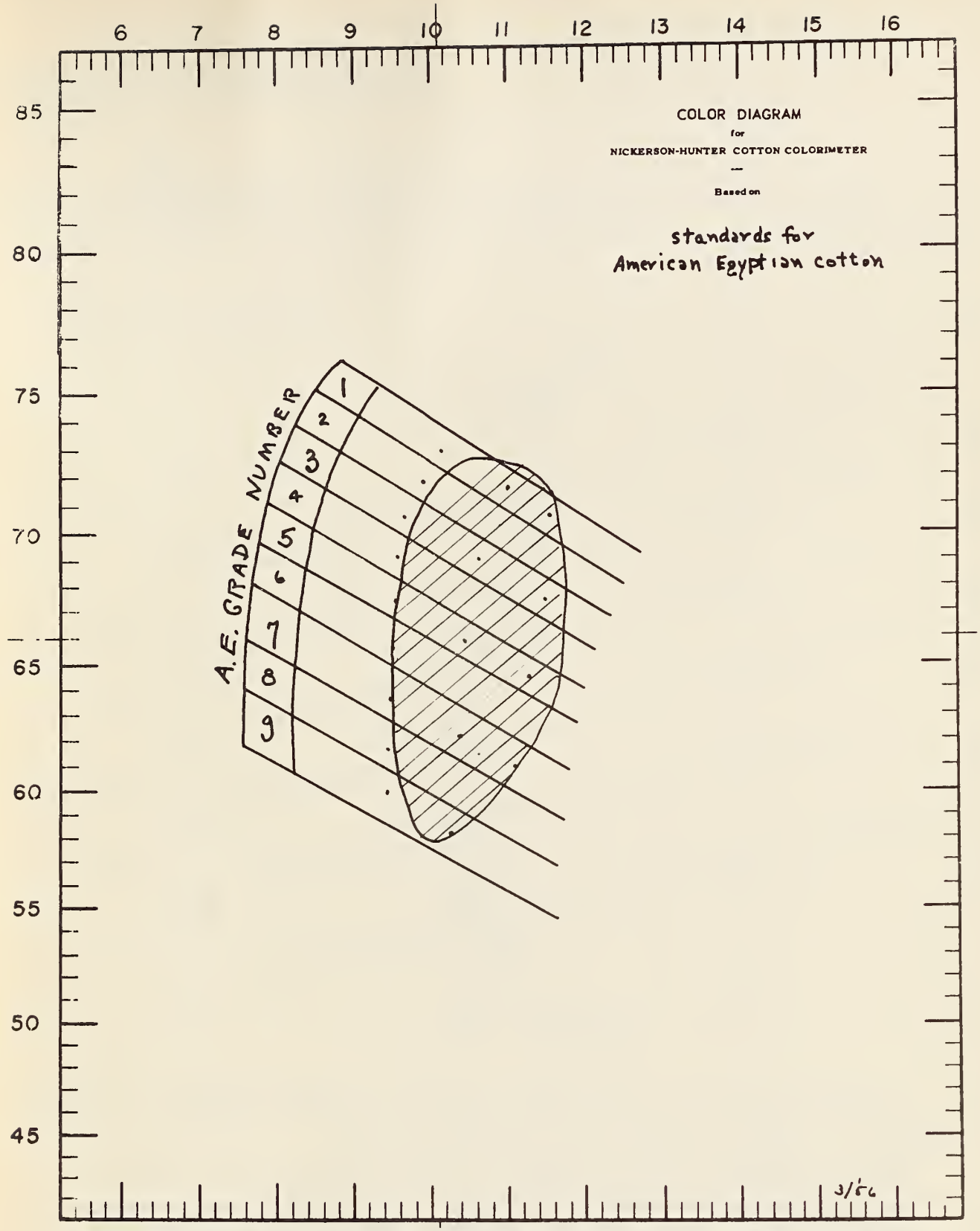


FIGURE 41.--RANGE OF COLOR OF AMERICAN EGYPTIAN COTTONS, GRADE SURVEY OF 1955 CROP SHOWN IN SHADED SECTION OF DIAGRAM.

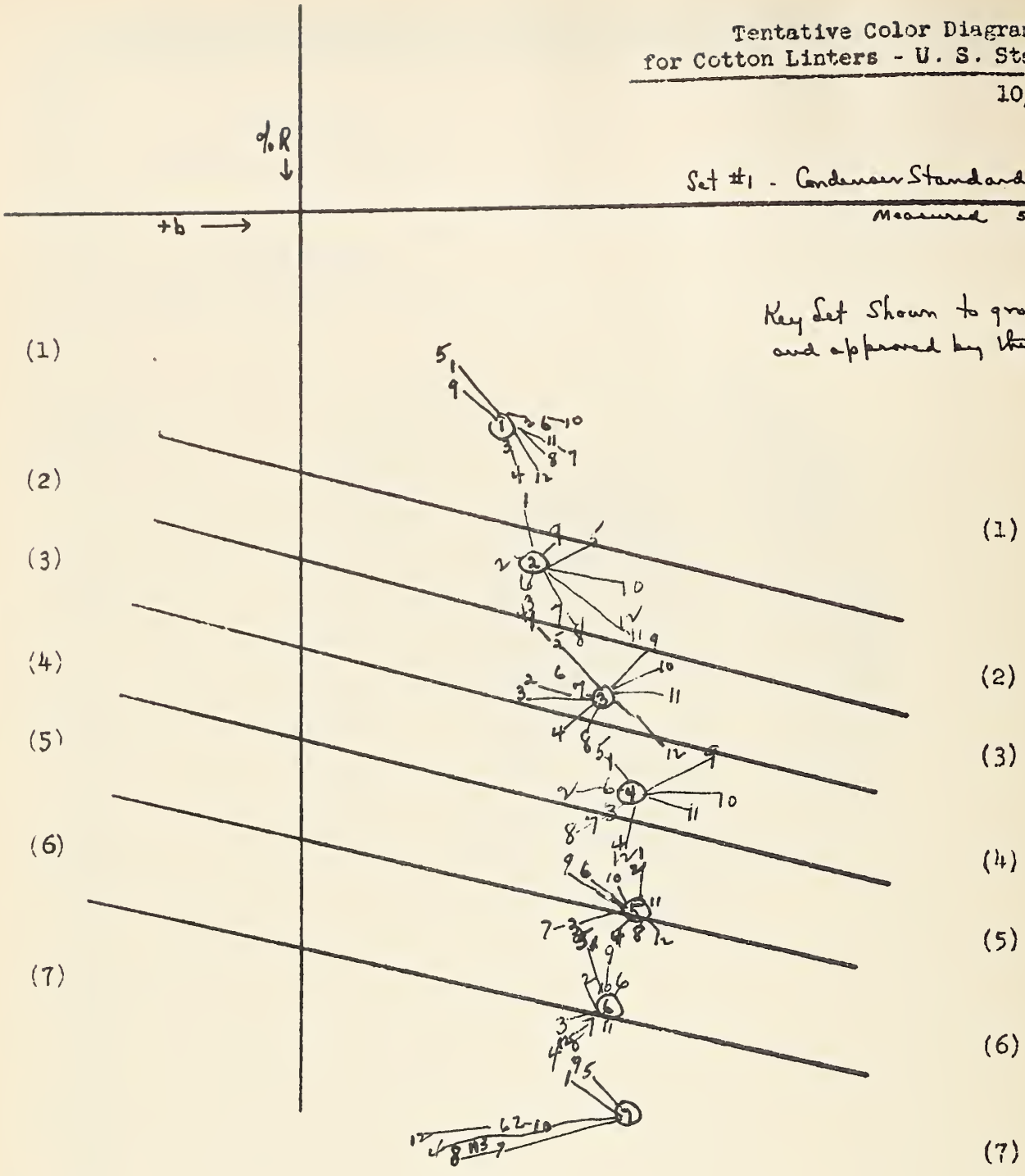


FIGURE 42.--LINTERS STANDARDS FOR CONDENSER TYPE LINT.

Key set shown May 1955 and accepted as guide for passing other 1955 sets. This diagram may be related to the level of the cotton standards diagram by use of the R_d and +b central crossbars. These are at R_d = 66.0, and +b = 10.1. The diagram is on the same scale as that used for the cotton standards.

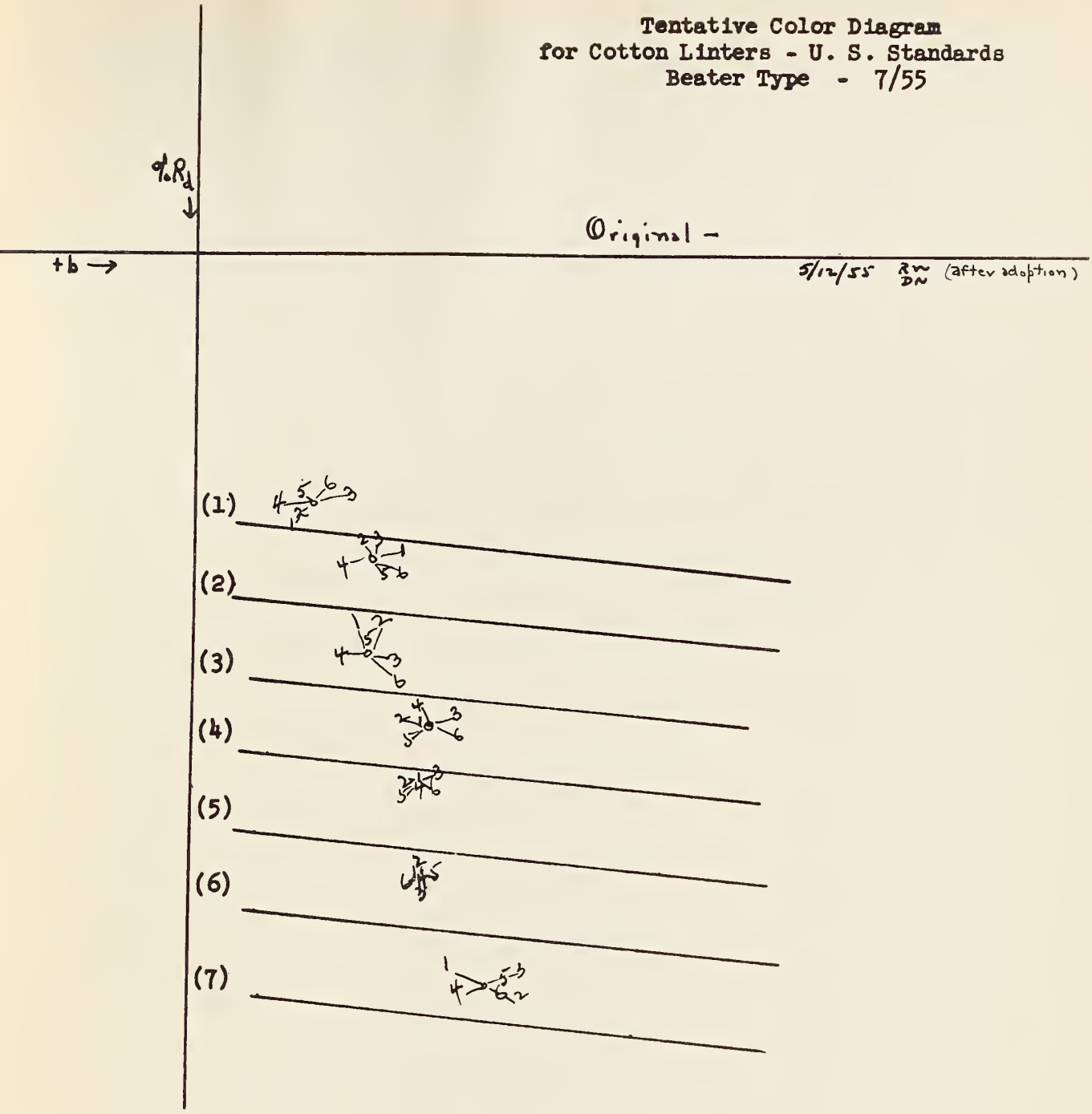


FIGURE 43.--LINTERS STANDARDS, COLOR OF ORIGINAL SET FOR FLUE TYPE LINTERS, ADOPTED MAY 1955.

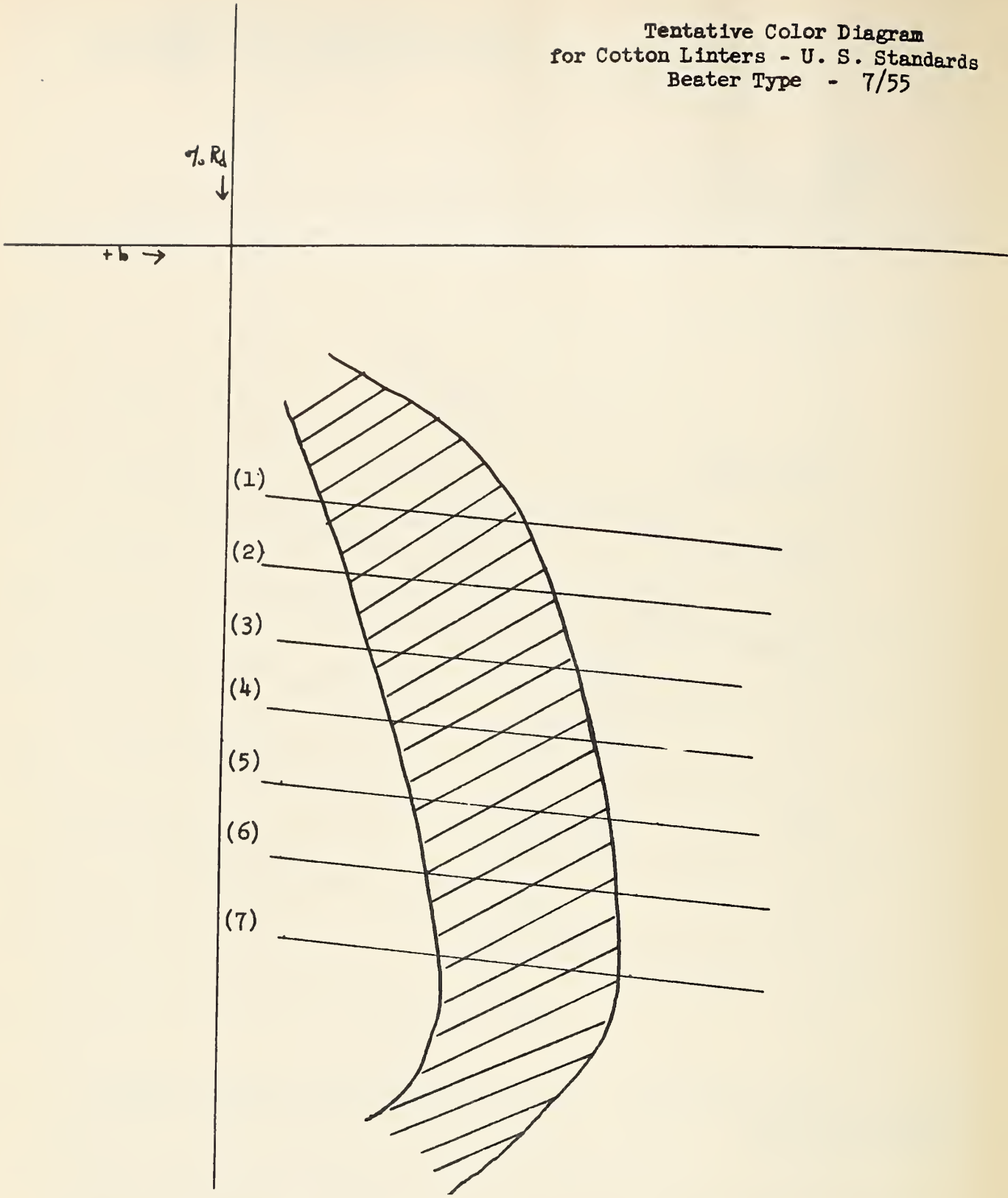


FIGURE 44.--LINTERS STANDARDS DIAGRAM SHOWING COLOR RANGE OF COTTON LINTERS. Crop survey of 1954-55 shown in shaded area.